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S. MacLean

1964 - 1966

Journal:

1964	Barrow, Alaska
	water analyses
1965	Barrow, Alaska
	feeding observation tables
1966	Barrow, Alaska
	feeding observation tables
	insect samples

S. MacLean

1964 - 1966

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1964 Barrow, Alaska
water analyses

Maclean
1964

Journal

9 June

Barrow, Alaska

Arrives at 4:15 P.M. via Wein. Too late to get any gear, so the tundra will have to wait. Checks into the tundra Hilton and the luxury lab suites that have replaced aerology. Spent some time shooting it with Holmes, then racked out.

10 June

Barrow, Alaska

Checks out some clothes, then spent the morning surveying the Tundra with Holmes. Melt off has progressed farther than 1st sight last year; the Beach Ridge is ca. 85% exposed. The lakes, marshes, and low points are pretty much covered, but it looks like it has softened up. Not much melting going on now - it's about 30°, with strong, consistent wind from N.E.. Ponds are iced over, and snow is crusted. The Lab is out of gloves and my hands are cold !!!

Follows main road to AACS, then cut across to South Beach Ridge, and walks down ridge toward Micro-Met. White-Rumps appear to be most abundant, and are extremely active ~~&~~ in chasing interspecifically (groups of 2-5) and intraspecifically (Pectoral and Bairds). Pectorals abundant (est. 2/3 W.R.); Baird's frequent

(1/3 w.r.). Pluvialis, Red-backed (and nest), Semi-Pal, Pomarines also seen.

After lunch, returned to AACS, then went out to gasline ridge. Several Semi-Pals; Pectorals and white-rumps still common. Saw Baird's (courtship?) display - nest with 4 eggs. Collected white-rump.

Evening - still cold wind from N.E.. Sunny. Surveyed Voth area. Very quiet. Extensive lemming cutting in localized areas. Pectorals seen displaying; most frequent on Voth Bluffs. One white-rump display. Heard semi-Pal. Returned when snow started falling. Wrote field notes and put up white-rump.

11 June

Barrow, Alaska

Cold! Snow flurries all morning. Spent A.M. acclimatizing in rack and reading. Prepared list of needed equipt, and tried to get ahold of it in the afternoon. Dreamed! Continued reading, then went out with RTH. Found good activity in Drum area - Baird and Semi-Pal - no sight of White-Rump or Pectoral. Found 2 Semi-Pal nests w/ 4 eggs each about 100 yds. apart. Sure there are more there. Came back and worked on G.D. paper 'till 3:00 A.M..

12 June

Barrow, Alaska

The kids will be happy when this damn

thing is done. Spent all morning and afternoon writing. Pitelka arrives on the afternoon flight, which event Brower celebrates in due style. After dinner went out with Holmes and Pitelka for a quick look, then returned and typed 'till I fell asleep on the typewriter.

13 June

Barrow, Alaska

Praise de Lord, I'm done, free, and graduated. Finished the thing and delivered it in person to some Fairbanks bound passengers at the air strip. Celebrated by walking back around Fresh Lake. Found two Semi-Pal nests, probably contiguous, 4 eggs each. Much activity of A calidris species in marsh E. of Fresh Lake.

Returned for dinner, then went out and spent the evening in the drum area. I seem to be somewhat lacking direction, not knowing exactly what I'm trying to do. Must attack problem systematically.

14 June

The day of the big think. Spent the morning in the drum area testing the feasability of certain methods of approaching the problem of shorebird ecology. Came back and wrote down some ideas, discussed some with Holmes, contemplated more over a pile of reds lemmings - definitely conducive to creative thought, worked

out the matter with Holmes and Pitelka, and finally worked out a problem that is specific enough to grasp, broad enough to be useful in more than one sense, wide enough to, if desired, at least begin direction towards a Doctoral program, and flexible enough to be dissected into component parts which can produce results alone. (What you want, fellow, isn't a problem. What you want is a tinker toy!)

Problem: Niche differentiation in sympatric congeneric species of sandpipers.

Hypothesis: the species of Calidrin sandpipers breeding locally may differ in:

a) time budget (esp. pectoral v. others)
b) nesting habitat
c) feeding habitat
d) feeding technique
e) food taken.

Method:

A. What's there - investigation of insect fauna, from point of view of potential bird prey.
   1) Berlezé funnel and/or hand picked soil samples.
   2) Vacuum for surface insects.
   3) Life histories of major components of insect fauna.

all this section put off into future.

Maclean
1964

Journal

B. What is taken?

Stomach content analyses of all birds - ♂♂, ♀♀, and immatures should be continued at maximum rate. I am guarantee project results will be made available.

C. Observations:

1) time spent in various activities - successively and total.
2) feeding habitat
3) method of feeding.

D. Museum -

measurement of bill lengths of adults and developmental stages.

Worked on lemming processing while formulating ideas.

15 June. Began in morning by working through Drum area to Beach Ridge. S-P, Baird's common. Long-tail Jaegers appearing, plus 2 parasitics. 1 ruddy turnstone.

afternoon - switched from clipboard to notebook - followed same route, but passed through Drum area more quickly. 3 Buff-Breasts in marsh, RB, B, SP, P all active (also WR).

Evening - late start, then out to Beach Ridge, and around central Marsh. I can see that I over estimated the rate of data accumulation greatly, but still collected goodly amount. Buff-Breasts and 4 other plovers performing

well.

16 June — Barrow, Alaska

Clear, warm day. Spent the A.M. getting caught up on field notes and letters, then decided to take some slides. Spent all afternoon taking magnificent pictures, then discovered 9.D. camera wasn't working. took another role of good Buff Breast display and Northern Phalarope.

In the evening put up Pectoral sandpiper and observed technique for stomach analysis on several Pectorals and White rumps. Fog rolled in as we were working. Looks like it plans to stick around.

17 June — Barrow, Alaska

Worked on Calidris feeding activity. A.M. worked through drum area and along beach ridge in dense fog. Afternoon followed beach ridge around bend. Very quiet. Thick fog and cold winds off of ice may be to blame.

Saw Snowy Owl flying over central marsh - 1st of season.

Evening - processed day's Lemming kill, then went out and depleted local snow bunting supply by 2. Put these up, then quit for night.

18 June — Barrow, Alaska

Spent the morning and part of afternoon collecting data, then tried to analyze results thus far. Discussed same with Pitelka and

Holmes, resulting in critical reevaluation of method and approach. Came out with better concept of what is possible and expected.

Spent rest of evening walking to see more of tundra. From gasline ridge, crossed Voth creek at waterfall, across family creek and up to Village Slough. Followed same inland, then back to Browerville, inland to cemetery, across ice on So. Salt Lagoon, and back to camp at 1:30 A.M.. Crossed extensive flat and gently sloping marsh, hummocky marsh, and polygonized uplands. Found new feeding habitat – mud of Voth Creek; 4 spp. feeding there simultaneously (R.B., Semi-Pal, Pectoral, Baird's). T. around 25°. Little shorebird activity. Dense Buff Breasts across Voth creek from Cake-eater. Other buff breasts in polygonized uplands beyond. Many rec-backs, pectorals.

19 June

Barrow, Alaska

Spent most of morning writing field notes, etc., then went out to see more tundra. Looked at marshy area N. of gasline ridge and several different types of polygonized terrain. Mostly just walked and looked. Met Pitelka and Holmes near N. gas-line ridge and rode in. Continuing to learn and develop feeling for tundra habitats.

Spent evening reading Britton and Wiggins re. Arctic vegetation.

20 June — Barrow, Alaska

Spent day observing vegetation of So. Beach Ridge, part of Central Marsh, and points West. Walked down Pitelka's plot to Wohlsday Slough, E until stopped by creek, then back West and around area between ridge and Elson Lagoon. Found large congregation of shorebirds - S.D, W.R, + Pec - W. side of Pow site - mixture of polygonized, mesic, and wet marsh-pond habitats.

Evening - continued reading in literature.

21 June — Barrow, Alaska

Woke up feeling like South end of a North-bound caribou! Managed to survive through lunch writing notes, then spent afternoon in field testing further refinement of sampling techniques, including use of spotting scope. Birds most uncooperative - refused to feed. Looked in polygonal area E. of Pow site. Moderate activity, but little feeding. After dinner went up to Beach Ridge with Helmes to spot White-Rump nests and check Buff-Breasts, then returned, wrote notes, and so to bed.

22 June

Barrow, Alaska

An astounding start ..... made it to breakfast. Spent A.M. collecting feeding data W. of gas-line ridge. Not too many: 000 - 014 - Weather cool (ca. 38°-40°), foggy.

Afternoon clear, warm (ca. 42°-44°), little wind. Covered Beach Ridge, then area West. 015 - 044.

After dinner copied notes and processed Lemmings.

23 June.

Barrow, Alaska

Worked area W of Beach Ridge and gasline. Weather clear + sunny, warm. 045 - 067.

Afternoon - worked Beach Ridge and polygonal area W, then Polygonal area behind Pow sight. Good activity on slope E of Pow sight. Flock of ca. 15 Pectorals, 2 white-rumps, and 2 red-backs feeding together - no antagonism.

After dinner went to Naliqukfuts in Village. Returned at 3:00 A.M, and hit rack at 4:00.

24 June

Barrow, Alaska

Little trouble getting up this morning! Struggles into lunch, and never stopped struggling all day. Checked

polygonal area around gasline. Little activity. Cold!!

Evening - processed beasts and wrote notes.

25 June

Barrow, Alaska

took off early bound for the vast uncharted interior. Spent the day on and around Holmes' plot at Itkrowik. Saw 3 knots on footprint lake. Collected 1 (MacLean 239). Plot is on upland, well drained tundra - noticeably different from immediate coastal region. Vegetation - more Poa arctica, Cassiope tetragona - more spp. of Salix. Saw arctic fox, ca. 8-10 snowy owls, at least 2 nesting pairs of Jaegers, many Buff Breasts, Pectorals, and Red-backs. No Baird's; few white-rumps; 1 semi-pal. Enjoyed getting away from noise and hustle, and trash of Barrow area.

Collected knot, tern, 5 buff-breasts, white-rump; not bad. Returned around dinner time. Ate, caught a quick sleep, then put up glaucous gull found dead on tundra.

26 June

Barrow, Alaska

A.M. - Put up tern and knot while trying to see Brower. Wrote field notes, ate lunch, and spent afternoon sorting

Finally successes in late afternoon.

Evening - foggy, but little wind. Went out with Stevens to line plot, then walked to gasline ridge and back. Found 2 phalarope nests (4 eggs) + Golden Plover (4 eggs).

27 June

Barrow, Alaska

Wrote field notes, then went out with Childs and Rich. Went up to Berrik and marsh beyond. Couldn't cross slough, so returned through camp to Voth area. They continued in weasel to capture live lemmings. Walked up footprint lake to arch in gasline, then along gasline ridge, past gas well, and down gasline ridge. Very little activity. Some birds seen - but mostly not feeding. Weather clear, sunny, moderate breeze from NW.

Evening - put up ♂ Old Squaw shot earlier and least weasel.

28 June

Barrow, Alaska

Slept in, then put up ♂ red back before lunch. Afterwards, collected feeding observations in E. Beach Ridge area. Weather clear, warm, breeze from W. First time out without parka. After dinner went out with Holmes to Gasline and Beach ridges,

again to collect feeding observations. Wind now from SW, colder. Day passable fair.

29 June — Barrow, Alaska

Spent entire A.M. and afternoon collecting feeding data. Found 2 Baird's nests, golden plover, and pin-tail nests. Worked beach ridge and W. Middle Salt Lagoon. Weather clear, sunny, brisk wind from East.

After dinner heard Hanna seminar re. Alaskan Earthquake, then gave summary of feeding observations to date to Holmes and Pitelka. Put up white-rump, wrote notes, and so to bed.

30 June — Barrow, Alaska

Put up white-rump, then went out observing shorebirds. Returned for lunch, then went out with camera. Got some good shots of Golden Plover. Returned - put up decapitates & phalarope, and ate dinner. Next put up one of Day's buff-breast slaughter - then went and checked hatching semi-pal nest. Quit.

1 July — Barrow, Alaska

Spoke to Brewer, then spent morning burning bridges. Wrote six letters to summary locations.

After lunch went out to take data and photographs. Damn camera screwing up again! Helpers ~~stevens~~ check line plots, then walked in.

In the evening Richard T. Holmes, Ph.D., presented an exciting, informative, and dynamic seminar on the (breeding) ecology of shorebirds. Too late to go out, so washed clothes and wrote another letter.

2 July

Barrow, Alaska

Spent morning observing feeding behavior, then received instructions for remainder of season from Pitelka and Holmes. Went out into field again, and returned just as the good doctors were departing.

Mirages were out in force today, and adult insects of several sorts are very much in evidence on the tundra surface. Shorebirds are now very clearly feeding on surface organisms.

Evening was spent in cleaning and reorganizing lab, and straightening out specimen situation.

3 July

Barrow, Alaska

Put up Rose' Gull and skeletonized Ivory Gull, then to the field. Collected feeding observations on W. Beach Ridge, to Utth Creek. Found Red-back nest in process

of hatching, new white-rump nest.

Evening - checked gas-line ridge and vicinity. Little activity.

4 July — Skeletonized 3 beasts, cleaned snowy-owl skull, then spent rest of day in field. Checked W. Beach Ridge, then Central Marsh. Collected ♂ King Eider and long-tailed jaeger.

Spent evening in Barrow Village at annual 4th of July celebration.

5 July — Struggled out of bed at an hour which will not be mentioned, and spent remainder of day struggling. Put up yesterday's kill. Preserved grey-cheeked thrush brought in by Bohnsack.

After dinner (have to admit it) went to movie - Student Prince. Don't regret it.

6 July — Got an early start - amazing - and observed feeding birds on Beach Ridge No. of Micro Met, and area N. of ridge. Found first white-rump nest hatched out, and flock of 18 white-rumps. Took chick and 5 adults from flock (Pitelka and Holmes will be proud!). Spent afternoon working west from there. Checked Pitelka's Plot. Found 6 Buff-Breasts. Took two (ibis). Also took Baird's sand piper chick several days old (Maclean-261). Weather cool and foggy.

Spent evening processing and putting up part of day's kill.

7 July — Today I fertilizes the tundra. Spent the day on Schultz' fertilizer plot assisting Steve Holland.

8 July — Barrow, Alaska

Finishes off Monday's White-Rumps, then made few quick observations before lunch. Spent afternoon leading Childs' seminar to S.F. State students, and assisting in entertainment of same.

Listened to Bohnsack's seminar on mite progress in evening, then checked white-rump nests. Burst of hatching has struck - amazing synchrony. Observers feeding, then returned with Stevens.

9 July — Barrow, Alaska

Woke up and found mineself fighting Childs' cold. Spent morning writing notes and putting up loan. After lunch, finishes loan, and so to the field. Another white-rump nest hatching. Cold and foggy - very little feeding activity. No broods of chicks seen, although several birds gave alarm displays. A large group of parasitic jaegers has been passing through the area - could effect shorebird

mortality.

10 July Barrow, Alaska

Spent Day collecting feeding observations. A.M. – Beach Ridge. P.M. – W. Beach Ridge and Gaslin Ridge. One more white-rump nest hatching; ♀ buff-breast still sitting. Not too much activity.

In the evening went out with Rick. Checked Pitelka's Plot – all quiet, no buff breasts – then continued on across Wohlsag Slough, and walked area beyond. Started back at 12:00 – and immediately through a track. Forded Slough, and walked back. Made it at 1:45 A.M.

11 July Barrow, Alaska

Spent Day Rising from Beck. Put up Pectoral chick, then to the field for the afternoon. Cold and foggy. Last white-rump nest has hatched out. Took feeding data from micro-net to slope SE of Pow Main. In the evening put up chicks, then to the field and area W. of Beach Ridge.

12 July Barrow, Alaska

Sunday – the Day of rest. Put up turnstone and skeletonized mussel, then went out with Rick to Duck Camp and Berrik. He bought 2 eiders, and we left word to bag a yellow-billed loon if

Journal

one flies by.

Big movie night - Disney's *The Living Desert*. Barf! Can't tell a goo Damn *Peromyscus maniculatus* from a "kangaroo rat"...

13 July

Barrow, Alaska

Pursup Parasitic Jaeger, then decided to put up Western Sandpiper chick from Wainwright, since specimens are probably few and far between. Went out with Jaap and Miller to Voth area and played tag with Mr. Urpik for a while. Little shorebird activity. Magnificent clear day, with a cold wind from the North.

After evening repast went out to photograph ye tundra. Couldn't resist few shots at Mrs. *Hyemalis*, but otherwise got (hopefully) some good vegetation pictures. Got my butt whipped at pool, then wrote assorted letters.

14 July

Barrow, Alaska

Spent day in the field collecting shorebird data along Beach Ridge, Holmes' Marsh, and Pitelka's Plot. Not bad activity. Clear, with cold North wind.

Evening - went to show (that picture should break me of the habit!),

then put up trapline birds till and shot pool 'till 1:00 A.M.

15 July

Barrow, Alaska

Wrote notes and put up trapline till, then went out with Stevens to Beach Ridge. Took camera and got few shots of Pomarine Jaeger, and collected some feeding data.

Johnson's seminar tonight on CRREL project - finally found out what some of those stakes are about. Then finished Parasitic Jaeger begun before seminar, and went out into field. Went to Gas-line ridge without a gun - usually the quietest spot on the tundra; tonight ..... place was wild with activity. Caught 11 birds in traps; flock of white-rumps, group of Semi-Peds, and various assorted species making all kinds of noise and commotion - mostly distraction. Remained 'till 1:00 A.M. - then nursed sick weasel back to Micro-met wannigan and stayed there remainder of night.

16 July

Barrow, Alaska

Put in a little extra rack time, then wrote notes and letters. Spent afternoon in field around Gasline Ridge, and marsh on either side. Collected 2 white-rumps

from flock of ca. 5 white-rumps and 7 pectorals (Maclean 285, 289), lone ♀ giving distraction display (284), and 3 birds from flock of ca. 25 white-rumps (286, 287, 288). Found Buff-Breast nest hatching, and took 1 chick. Activity good, but nothing near previous evening.

Returned and, but for one brief foray, spent evening in lab working on specimens and shooting the shit.

17 July — Barrow, Alaska

Went out to Gasline Ridge to check traps and see what could be seen. Buff Breasts and chicks have left nest. Flock of white-rumps still around. Otherwise, all quiet. Saw number of broods of chicks on road to and fro. Old Squaw has deserted. took egg - no embryo. Returned and spent rest of day putting up 6 white-rumps, jaeger, and Dunlin chick.

18 July — Barrow, Alaska

Spent day setting traplines to keep from getting too far behind. Went with Stevens and Logsdon in morning to set 5 and 6; after lunch Logsdon decided to take a nap, so Stevens and I set 13 and 14, and 8 and 7. While en route saw ♀ Buff-Breast with chicks; likewise Brant and 2 clutches

Golden Plovers. Collected 1 chick from each. Observed several clutches of Pectorals in marsh around fertilizer plot.

In the evening put up day's chick harvest while scheming on 2 recent arrivals, ♀♀. Crown up with stag impromptu happy hour.

19 July

Barrow, Alaska

Spent most of morning working on another owl skull and writing notes, then went out with Stevens en route to line plots. Got out at ~~Tom~~ Gasline Ridge, and worked area S. and E. of ridge for afternoon. Collected another presumed ♀ White-rump, and observed feeding in marsh, and around polygons. Saw ♀ with 3 juv. buff-breasts ca. ½ mi. N. of nest. Another presumed ♀ near end of trapline 2.

After showtime went out to check traplines - 5 + 6, 7 + 8, and 13 + 14. Impressed by possibility of using trapline data as index of shorebird habitat preference. Also hit upon idea of carrying a small spring scale with a net or some other devise to weigh chicks in the field. Could

∴ obtain a more accurate population growth curve without need of taking chicks.

Checked Pitelka's Plot and walked ridge near fertilizer plot for sign of Buff Breasts then went across to gasline ridge and searched for Buff Breasts there. Returned to wannigan at 3:00 A.M. and spent night there.

20 July

Barrow, Alaska

Made it for breakfast, then went back to bed 'till 9:00. Went out with Logsdon and one of visitors to check traps. Again walked ridge near fertilizer plot ..... nothing!

Started writing notes in afternoon, and passed out in chair. Woke up in time to finish notes before dinner.

Took evening off to go up to Birnik. At least 10 flocks of ca. 150 - 250 ~~eio~~ king eiders plus numerous smaller flocks of eiders and old squaws passed. Over. Duck camp cleaned up. Afterwards, small party (very small) with aforementioned visitors, until ... late.

21 July

Barrow, Alaska

Received a letter from Dr. Pitelka, and began long overdue letter in return.

Wrote what little ~~we~~ I've seen on buff-breasts. Doubt if it was a very stimulating epistle! In the afternoon went out to far side of Gaskin Ridge and looked for shorebirds out there. About as interesting as the buff-breasts..... nothing! No place!

Ate dinner and put up white-ramp, then went out with Logsdon to pick up traps. Saw flock of Pectorals near end of 7/8 - occasional lone Pectorals near trapline. Saw Peregrine Falcon being harassed by pair of pomarines. Took off for next county, and never stopped. Very quiet around fertilizer plot as lines 13 & 14 were taken in. Saw group of 3 parasitics working drum area as we came in. Left off Logsdon, then went out to wanigan and left wood for Stevens, then walked in.

22 July

Barrow, Alaska

Began another day by cleaning Pomarine Jaeger skull and finishing 2nd Ukpik while finishing Pitelka's letter and starting letter to Holmes. Finished weighing and freezing all

Macbean
1964

Journal

shorebirds from second trapline run to date. Afternoon was spent around Beach Ridge looking at nothing — not because I didn't want to, just because the birds were elsewhere. Wish to hell I could find this elsewhere where the birds have been hiding out lately!

Evening was given over to frivolity — beer, women, good conversation, etc.

23 July

Barrow, Alaska

Continued Holmes letter till inspiration ran out. Warmest day of year, without doubt. Couldn't spend a day like this inside, and besides, on a day like this the birds should be really active. Ha! Went out with Stevens to Beach Ridge, then walked through low polygons to Gasline Ridge. Not bad in polygons, but Ridge looked like Hiroshima, the next day. Found Pomarine Jaeger juv, cuppla red-backs, few mosquitoes, and not much more. Temperature was recorded at 63° on Beach Ridge, and felt like 93°! Went back to Beach Ridge and went swimming in upper Meadow Lake

Moeller
1964

Journal

with Bruce Leiske, then went in.

In the evening Operation North Star was honored with a happy hour, which the investigators were allowed to attend as local color, provided "bachelors" left by the "normal Vinell Dinner hour". Somehow, Stevens and I forgot to leave, and ended up with the official party - both floating two feet off the ground. I came down when Schindler gave me some drunk to see through dinner. Well... most of the way down.

After dinner, went into the village with the brass, then came back and ran Hagedon's traplines while he lay passed out on his bed. Chance to check Voth area at 12:00 midnight. Great! Pectorals fairly active; group of adult semi-pals and occasional bairds seen. Night still clear and cool - outstanding.

24 July

Barrow, Alaska

Welp - yesterday was summer. Back to cold, foggy weather. Wrote another paragraph on poor Holmes' letter, then National Geographic photographer Ted Spiegel (who is a pushy

Maclean
1964

Journal

*#!;–, came into fins out about lemming project. Gary and I tried to be patient with the idiot as we oversimplified and tried to put the project into Nat'l Geographics terms. Agreed to go out with him and try to get some pictures. Mañana.

Hócus o'égk, Stevens and I went up to Pitelka's Plot and searched for shorebird life there, then searched Holmes' Morass, then Pond Main Polygon, then Beach Ridge, then got pissed off and went in. I think maybe they took the generalsour to the tundra and let them shoot birds for entertainment. They didn't miss many! Collected & cicer, and checked 2 Potterine nests, then went in.

First real rain of season hit in evening. Not much at that, but enough to keep birds down. Put up red-back, wrote notes, played ping-pong, then B.S.'ed 'till 2:00. By then the sun had come out, so went out and walked on beach until 4:00.

25 July

Barrow, Alaska

Up at 9:30 (amazing) and went

Macka
1964

Journal

out to Jaap Kaalf's Pond with Jaap, Gary, and Mr. Photographer. Spent the morning nature-faking. First Jaap pretended to be sampling his pond, then stood impatiently by as Pitelka Project assistants staged shots of lemming in runway and great lemming chase. Don't tell anyone, but we used a lab animal captured yesterday.

Got back barely in time for lunch. Mr. National Geographic asked to go out at 3:00, so I stayed in and wrote notes waiting..... and waiting..... and... About 4:30 I began to suspect. All was not in vain, as an Eskimo came in with two yellow-billed loons. Rick and I had left word at the duck camp, never really believing...

Heard about a plane leaving tomorrow for S.W. Alaska to pick up some bear cubs for Folk project. Went down and talked to Max (40 min. about sex, 2 min. about plane) and left without knowing much more than I knew going in. Returned - weather still miserable, so put up long-tailed Jaeger, & dover, then packed some gear, just in case.

Maclean
1964

Journal

26 July

King Salmon, Alaska Peninsula, Alaska

Amazing! Waited around for Max in the morning, but when he came he didn't seem to feel like cooperating, so the kid busily helped load the plane, and at 11:20 A.M. found himself on the trip ticket. Flew to ~~Fairbanks to~~ Unalakleet to let our American party for trip down Colville collecting mus, then on to Fairbanks to let out our two ♀ visitors. Went out to college to get a car, then into Fairbanks for booze run, back to airport, and off for King Salmon. Flew past Mt. McKinley, and got a few brief glimpses through the clouds. Quite a chunk of land. From the air, Southern Alaska looks very much like Northern Alaska except for the trees. Still much water, little relief, and large marshy areas. The trees are largely limited to river valleys, etc.. Look like black spruce - Picea mariana.

Landed in King Salmon about 8:30 P.M., and were met by Chuck Lino - local fish and game man. One of the bears has chewed its way out of the box he was in, so we went down to riverfront

Maclean
1964

Journal

to transfer him; then set 12 snap traps beyond end of runway. A few burrows looked active, but no real good sign. Traps set in scrub willow area near creek. Returned to restaurant and, finding this closed, spent evening until 11:30 P.M. in bar.

Sun went down ca. 9:00 - real night, dark, stars, etc. We'd almost forgotten what night is like. (Should have a pretty good idea by this time next year).

27 July

Barrow, Alaska

Got up at 4:30 A.M. in King Salmon, after sleeping in back of RA-D. Sun rose there at 4:00. Went down to the river and took a fish and game outboard skiff down river about 3 miles (we thought we were going up river, but ... technicalities.) River here is about 220 yds. wide and 10 feet deep - the Nacknee River (sp?). Dense willow groves lines the river on either side, with either spruce forest or muskeg beyond that. Ties up the boat and walked along shore and then inland a bit. Wild flowers are at their peak - especially fire-

Macfarlane
1964

Journal

weed (Epilobium sp.). Willow groves along river, streams, and ponds - dense growth to ca. 30 ft. - mostly willows with alder and birch. Muskeg - grasses to ca. 2 ft. on moss base. Collected Canada jay, unidentified sparrow and warbler from willows around pond, then walked through spruce forest and took another jay. Steve Holland collected plants, and 2 bumblebees for Mike Miller; Roger Hedge just walked. Returned upstream at 7:30 A.M, and checked trapline. Zilch. Surprised me a little.

Ate breakfast, then wandered around town and surrounding area, waiting for pilots to get motivated, then left for Bristol Bay fisheries with Fish and Game man. Another chance to see area. Collected as ♂ and 3 juv. Willow Ptarmigan en route. Arrived at Red Salmon Cannery, and walked through it. Season has just ended, and cannery was not in operation. Saw numerous Western and California Gulls along shoreline of bay, white-crowned sparrows and American

Maclean
1964

Journal

goldfinches in Alaska, Arctic ground squirrels throughout area.

Ate lunch in company mess hall, then waited while Murphy talked to owner about buying fish for animal food. No deal, so back to King Salmon. Once more saw numerous ravens, calling in flight. Collected ground squirrel.

Back at K.S. - transferred bear cubs to our cages, and took off for Barrow. Flew direct, and landed at 7:30. Moved bears to animal house, then ate dinner and wrote notes, then hit the rack.

28 July — Barrow, Alaska

A new record for the arctic slope - in a day.... 15 visits to the T-house (or the nearest substitute.) You might say the tics was having problems! In light of this, stayed within sprinting distance and tryed to pick up birds between trips. Managed to get 5 done. Not much else!

29 July — Barrow, Alaska

There's hope - I'm slowing down. Spent morning putting up

Maclean
1964

Journal

loon, then, in afternoon - took a chance and looked for the fields. Uses all my energy walking to Beach Ridge wannigan. Collapsed in a heap on a bunk. After a bit went out and looked at where shorebirds used to be, then waded through upper meadow lake trying to cut off jw. old squaw. I have suddenly developed infinite respect for old squaw's ability to avoid predation!

Joop Kaalf seminar tonight - scheduled at 8:00 — Brewer showed up at 8:50. Poor show. Interesting seminar, despite Miller's frequent interruptions. Afterwards put up 2 more king Salmon birds and fell into the rack. [What the hell is a Salmon bird??].

30 July

Barrow, Alaska

I'm normal! Sigh.

Wrote two long-procrastinated letters, then put up squirrel in morning. Spent afternoon in fields south of Beach Ridge wannigan. Activity better than any day in past week or so, but not too much feeding. Saw several clutches of pectorals, 1 of a few

Maclean
1964

Journal.

Plovers. Found Jaeger pair # 2 shot by eskimoes. Saw 2 white rumps together - collected one.

Returned for dinner and spent evening processing days kill, writing notes and letters, and listening to music.

30 July

Barrow, Alaska

Morning was spent ~~in~~ making line mount of remaining immature Ptarmigan. Except for the Ostrich legs, not too bad. Again I'm looked again.

After lunch, took jeep out to Pitelka's Plots. Beats hell out of a weasel. Very embarrassing - found Buff-Breast with 3 juvs. almost ready to fly. Eat crow! Also found flocking adult red-backs in dried up ponds, feeding in muck. Saw juvenile pectorals that couldn't have been more than 3 days out of egg, next to flying immature pectorals. Surprised at overlap, 'specially since white-rumps were so synchronous. Saw juvenile of Pom. Jaeger #4 in Holmes' Morass. Took ♀ king eider from passing flock. Observed feeding in Morass and Plot, then returned to Sifvens' Plots. Brought

March
1964

Journal

in some of Muller's traps and plywood squares left by Logsdon, and returned at 6:15 P.M.

Tried to find Beck to get vehicle for evening. No luck, so put up buffie and cider, then wrote notes.

Suggested to Schindler today that we send H.S. directly from the train to Wainwright. Can't see another two week effort to get him in the field.

1 August

Barrow, Alaska

Up and into the field early. Moved all of Stevens traps to other plots, then took jeep out towards gasline ridge. Can't get as close as a weasel, but much easier, and no worry about tracks. Walked ridge and area East. Red backs and Phalaropes in groups very much in evidence, plus scattered pectorals. No sign of Jaeger pair #1. took camera - G.D. thing screwed up again. Also broke cable release and stopwatch. Good Day. Returned to wannigan at 2:00, and ate sack lunch. By then weather has turned from bright and sunny to foggy and 30°. Great. Helped Stevens set traps, then

Mackan
1964

Journal

looked around there a while.

Planned to go out after dinner, but lab schedules slide slow by Hultéen, so stayed in for that. During show rain turned to snow, and by 9:00 there was ca. 1 inch on the ground. Took a few pictures around the lab, then went out to live plots with Stevens and Holland. Really beautiful grass sticking out over the snow - untracked, clean .... even made the barrels look almost quaint. Found a brood of red-backs no more than 3 days out of egg running across snow near AACS. Hope those pictures turn out!

Storm has passed by 10:00. Came in and wrote notes to music again.

2 August

Barrow, Alaska

Didn't do a damn thing today! Weather was cold and misty, with occasional periods of frozen mist. "There won't be any activity today" rationalized I, and since we didn't have a weasel - stayed in and wrote several letters, worked on skeletal material, waves goodbye to Hagedorn bound for the tracks,

Maclean
1964

Journal

wrote notes, and generally vegetates.

3 August

Barrow, Alaska

The day of the big trip to the interior. Steve Holland wanted to take grass and soil samples along gradient from ocean. I went along to observe birds. Left at 8:30 A.M. with sack lunches. travelled along Cakeater road and then towards Utqiavik, taking grass samples at one mile intervals. Again, little bird activity, except for occasional flocks of redbacks, and scattered pectorals. Weather - cold, dark. Occasionally fristing [frist = frozen mist; S. Holland]. Never got above ca. 35° all day.

Ate lunch at south end of Utqiavik. By now, noticeable differences in birds. terns fairly common; arctic loons very common (downy juv. collected); only shorebirds seen were red-backs and pectorals; owls much less abundant. Kept a particular watch for buff-breasts and white-rumps. Did more particular watching than seeing! No buff-breasts; two white-rumps by W. side of Utqiavik (one collected). Saw few scattered black-bellied plovers - collected one. Later, saw large flock of

Mackay
1964

Journal

same.

Last Holland sample taken at about 5:00 P.M. at South end of long lake beyond Ikkwaik, about 10 miles from coast. Decided to continue home to South. Passed flocks of turnstones and redbacks, and 2 large flocks of Sabine's. Diminished each. Loons and Pintail ♀♀ now extremely abundant. Reached North end of Lake Sungovoak about 7:00 P.M. What the Hell! Kept going South, between L. Sungovoak and L. Kimouksik. Sungovoak is gigantic - like reaching the ocean. Flock of ca. 150 Redbacks + 30 turnstones between lakes. The polygons here were largely covered with tussocks of E. angustifolium. Holland reports less Dupontia in grassy meadows.

Continued down narrow land bridge between two lakes, until eventually stopped by deep, ice-bottom stream at South end of Sungovoak. As we looked at the stream a boat put out from the Eskimo camp at the end of a bay, crossed the ice, and came down to us - Nate somebody and his son Danny - about 10 years old

DENBOX

Maclean
1964

Journal

and doing a man's job getting the boat through the ice. They took us up to their camp of 5 tents, where we had tea and crackers. They were there fishing for whitefish and hunting caribou. Badweather has hurt the caribou hunting, but a number of fish, ca. 1½ ft. long, were drying on a line. Visited for a while, then left for home about 9:30 P.M.. Followed the weasel tracks home, which made travelling much easier. Arrived home at 12:15 – pretty darn hungry and tired. Ate and fell into the rack.

4 August

Barrow, Alaska

Woke up somewhat later than usual with a headache. Spent the morning writing notes and starting on yesterday's birds. In the afternoon checked out a weasel and went out to AACS to pull Stevens' jeep out of the mud. Was planning to stay out and check Pitelka's Plot, et, but when the snow started staying on the ground, tissed off and came in.

Sat out the storm in the evening putting up more birds and B.S.'ing with

Maclean
1964

Journal

Chilos, back from Peters.

5 August — Barrow, Alaska

More lousy weather - snow every day this month. Spent morning and early afternoon finishing up Monsey's birds, then went out briefly. Nothing! Weather must be keeping things down. Red-backs are now the only birds seen flocking. Now feeding along both wet and dry margins of ponds. Pectorals are alone - the only birds commonly seen with young - feeding in open water, pond margins, and wet tundra. Baird's are rare at best, as are semi-pals. Can't figure out what happens to the white-rump ♀♀ and immatures... they must be somewhere, but doesn't'if I know! All in all, things is extremely quiet right now.

In the evening - Chilos' seminar plus the Maher-Pitelka film. Interesting, especially the penguin pictures. Afterwards, 'long as projection machine was out, they showed ARHI and ARL films. Afterwards, welcomes Teraza back in proper fashion.

6 August — Barrow, Alaska

Weather finally improving. In

Macka
1964

Journal

morning took weasel out to Stevens' plot and helped move traps, then went over to Voth area and looked for shorebirds. Not at, for! Found a few - 2 broods of pectorals, small flock of red-backs.

After lunch went out with Teresa to Voth area to capture live lemmings and observe birds. Better. Captured 7 lemmings and saw more bird life than previous 2 weeks or so - still almost all pectorals and red-backs. Returned to see Hank off, then returned to field in evening. Checked Pitelka's Plot, and found total of 9 birds - all longspurs. [Checked slope of my recent embarrasment - nothing.]. Returned, wrote notes, then listened to music and read.

7 August

Barrow, Alaska

Up early, and wrote a letter to my draft board. Sure hope they like the letter. Wrote another letter, then went to village with Riley and Rick. Slight delay after Riley screwed up truck, but made it back just in time for last of lunch. Afterwards passed out awhile, then went into field horizontally around Stevens'

Maclean
1964

Journal

plots. Saw ..... grass, and flowers, and owl droppings, and even a few lemmings.

After an interesting conversation with Meguro and tea after dinner, walked out to Stevens plot and took weasel out to corner of Beach Ridge. In summary, to Wannigan, saw 1 shorebird (pectoral). Drove to C+GS shacks, saw Peregrine Falcon. Cursed myself all the way back to camp for shotgun! Returned — no birds. Some people never learn! Walked slope below CGS, Pow sight low polygon area, and W. Holmes' Morass for 1½ hrs - saw exactly 1 shorebird. I can not believe this is normal! Last year in late August there were many more. Where are all the young of the year ??? Walked back through drum area - saw short-eared owl, 0 shorebirds!! Gets discouraging.

8 August

Barrow, Alaska

After clear night, foggy again, this time with wind coming up from North. Spent day working with Tenaza, just to see what Chilks Project is all about. They sure haven't done much for a summer's work. Max called a Happy Hour in afternoon for group from AINS. Very unimpressive group.

Moelan
1964

Journal

Spent evening in fields around Gasline Ridge. Saw ess. backs, phalaropes - pairs. Came in when good snowstorm hit around 10:00 P.M.

4 August

Barrow, Alaska

Took some of AINA people out for big look at tundra in morning with Rich. Went out to Beach Ridge, near C+GS and tried to look at birds as they used film as fast as cameras would run.

In afternoon escaped alone to Pitelka's Plot - zero - then Holmes' Marsh - roughly the same. Drove up close to owl, but couldn't get gun and self out hatch fast enough. Did see - wonder of wonders - an immature white-rump, which was promptly dispatched. Also several black-bellied plovers, which weren't.

Broke down and went to the movie in the evening - not too bad, either. Then put up white-rump before retiring to write a letter.

10 August

Barrow, Alaska

Actually got something done today. Amazing. Spent morning cleaning, packing,

Maclean
1964

Journal

writing, skinning - and generally getting caught up on little things. After lunch went out with Steven to help him move traps, then spent remainder of afternoon bird watching. Saw group of shorebirds feeding near N. Meadow Lake - collected 5, inc. 2 imm. white-rumps, then, across to Holmes' Marsh. Saw Peregrine Falcon again near CGS. Collected 3 imm. buff-breasts at Lewellyn's Weir (CRREL Project). Observed feeding, then returned. After dinner, lay down for an hour or so, and woke up at 11:00 P.M.. Got up and put up 2 buffies (#328+329), then finished cleaning two skulls and wrote notes.

Beautiful weather today - actually warmed for a while in shirt-sleeves, until it suddenly got cold around 4:00 P.M.. Today the ice finally went out - all kinds of open water now, unless the wind shifts. It is now getting almost dark for nearly 3 hours! Beautiful sunrise now - 1:45 A.M.

11 August

Barrow, Alaska

Decided to get refrigerator cleaned so put up odds and ends, plus those I had shot for Rick that he was letting

Macbean
1964

Journal

go bad. Put up 6 skins and processed. A more waiting for fog to lift. It never did. Finally gave up and went out in spite. Effective visibility ca. 60 ft., which didn't help. Saw white-rump in polygons by Upper Meadow Lake, and shot pectoral and semi-pal before finally getting it. Observed feeding there and beyond Gasline Bridge until too dark to see. A new experience. Picked up 3 Phalaropes for Jaap on the way in. He wanted stomachs right away, and, I couldn't bear the thought of ripping em up, so put up 2 before racking out at 1:30.

12 August

Barrow, Alaska

Spent morning finishing up yesterday's birds, then went into field. Saw 3 buff-breasts by Upper Meadow Lake - collected 1. Planned to go beyond Fertilizer Plot, but saw 3 more buff-breasts by O end of Pikka's Plot, so stopped there. Blasted buffy all over the tundra. Fog suddenly came in, and didn't see much more all day.

Took it easy writing notes ~~all~~, then

Maclean
1964

Journal

to the sack early.

2nd day in a row fog has kept us from landing. Kind funny - 2 investigators trying to get out, held up by fog, were here to study..... fog!

13 August

Barrow, Alaska

Must have been more tired than I had realized. Slept late after going to bed early. Spent remainder of A.M. working on yesterday's birds.

Right after lunch headed out for field. Took Bill Beck's 2 boys along. Walked the legs off on Pitelka's Plot - no trouble after that. Again - Buff-Breasts all around C+GS + O end of P's Plot. Collected 2 - both immatures. All are feeding on very dry lichen or sparce graminiform and lichen slopes. Is there a recrudescence of adult insect activity??? Not much else on plot. Set 3 owl traps, then moved on past plot. Crossed Wolfslay Slough - 1 Buff-Breast Flew. Searched far side of slough, then ridge by Fertilizer plot... Nothing!

After dinner got a Holland haircut, then processed day's kill and fixed Teraza got yesterday for Willie Joe's head.

Cool and very windy today - but clear.

Lacka
1964

Journal

Have decided to run pit-fall traps next summer, even if no other insect sampling is done. They're easy to run, and will prevent repetition of present quandary.

Maclean
1964

Journal

4 August

Cape Thompson, Alaska

Got the word this morning that today was the day for Thompson flight, so hurry up and wait! Spent morning packing gear, then went out and closed owl traps on beach ridge. First call: 1:30, then 2:30, then 3:00. Finally made it at 4:00, and darn near got left behind at that. Flew along the coast all the way in beautiful, clear weather. Good view of camp, but flew directly over the village. Took a role of film, then discovered that camera was acting up again. Screwed it up thoroughly trying to see exactly what's wrong.

Circled over bird cliffs and landed at 6:30. The place is really something! We'll save description for tomorrow. Ate dinner, then unloaded gear. Fog came in just as plane left, but went out soon after. We took over USGS jamesway hut and set up mouse equip, then walked down beach a bit. Saw Semi-palmated Sandpiper, flights of murres, kittiwakes. Came back, [illegible] with "permanent" summer residents, then tried to sleep while eskimos got juice or beer we'd brought in.

Mackay
1964

Journal

15 August

Cape Thompson, Alaska

Great night! Eskimoes went until beer ran out, and then the cook, to retaliate, turned the record player on full bore at 6:30 A.M.. Got up and talked him into turning it off, ate breakfast, then back to the rack. Got up at a more reasonable hour and looked for mouse sign before lunch. Absolutely zero fresh sign.

Rich and I spent the afternoon walking down the coast (South) to look for sign there. As before — nothing. Saw fresh bear tracks in beach sand (3 were sighted a few days back). Old Walrus carcass on the beach — what a giant among beasts! I hadn't realized.

The camp is on a gravel mound at the mouth of a broad valley, sloping gradually to 600-800 ft. hills. The bird cliffs are about 1 mile North of camp, and are the ocean face of the ridge bounding the valley on the North. The long axis of the valley runs NW-SE. There's a ridge paralleling the ocean, beginning about ½ mi. South of camp, which separates the valley from a narrow coastal plateau. Will attempt to construct a map later.

The area is actually part of the

Maclean
1964

Journal

foothill province, and the vegetation is very different from Barrow. The low and gentle slopes are covered by a grassy tundra growth consisting of Eriophorum and Poa. This grows to, at best, knee height. It looks like the understory of moss found at Barrow, but instead has a deep litter layer which cracks with every step. As at Barrow, it seems like it should be wet, but is very dry.

The talus slopes of the hills south of camp are covered by prostrate willows and a few other woody plants which I don't know. Wait..... one of the others is a dwarf birch which is the dominant plant of the upper slopes. This has turned red in many places, so that the entire hillside is colored red. = Betula nana

The upper valley is a broad tussock ("Nigger-head") meadow of bunches of Eriophorum, about the size of basketballs. Makes it extremely difficult to walk over.

Later, we discovered that these shale hills and slopes to the south differ markedly in vegetation from the limestone derivatives to the north. There, there is much more Cassiope tetragona, more species and individuals of flowering herbs, and different species of willow.

Machia
1964

Journal

One of these grows, in favorable spots, to ca. 3 ft. high, while the willows on shale are nowhere more than 1 ft..

There is a gravel river bed running through the valley which supports a riparian willow stand of the same spp. found on limestone. Ptarmigan (willow) are abundant in these beds.

So - there we were, walking down the coast. Collected a godwit, which turned out to be a bar-tailed, and a pipit. Climbed the ridge, and almost got blown back into the ocean. It must have been blowing a steady 35 knots on top. Could jump up and be moved almost a foot by the wind. Sat and looked out a while, contemplating how close we were to Russia, then hiked back for dinner.

Afterwards, walked through meadow North of camp, again in search of nest sign. Cross up at base of bird cliffs. Fantastic! Murres all over the place, and horned Puffins numerous. It looks like a swallow colony, with birds flying in and out. We could only see a small part, so we don't know how far it extends.

Watched the murres coming in for

Mackay
1964

Journal

landings. About as often as not they would pull out just before reaching the cliffs and circle again to make another pass. I guess it is because they are on the wrong ledge, or can't find room on the ledge. The horned puffins were much less active - mostly just sitting. We saw but one ~~[illegible]~~ tufted puffin. Hope there are more someplace.

Sat and just watched for a few hours, then came home. Put up pipit and goodwit, wrote some notes, then quit.

16 August

Cape Thompson, Alaska

Decided to set a line of traps in meadow East of camp. Set 47 Shermans, but don't expect much. Rich went back to take pictures of minnie before they all died. I decided to climb ridge North of camp, which ends in birds cliff. Collected 2 wheatears on the way up. The top of this ridge is a limestone plateau that is very rocky, and looks exactly like a Sierra alpine fell-field. Walked out to the end of the ridge, looking down on birds cliffs, then walked back and into next valley over. Saw fair amount of more recent mouse sign, but still not too active. Valley quickly narrowed to steep

Maclean
1964

Journal

canyon. Saw snow-buntings, savannah sparrows, wheatears along sides of canyon. Much squirrel sign. Several possible blue-throats seen, but never got close enough to shoot.

Canyon continues ca. 1/2 mi., and ends in 50 ft. long snow pack at edge of beach. From there, walked over to bird cliffs. Fantastic. Murres along every inch of every ledge large enough to stand on, from 10 to 300 ft. above ground. Hard to estimate numbers, but, maybe, 50,000 murres, 150 horned puffins, 1 tufted puffin seen in one hour. Most surprising of all..... murres are just hatching. Many are on eggs, and the ground below the cliffs is littered with chicks that have fallen off. Several of these were still alive. Collected a few of the freshest, then just sat and watched birds take off and land. Often two birds would, in a territorial dispute, push each other off the ledge. This usually precipitates a real battle. As I came up 2 birds were going at it on the beach, and continues in the water. Really acted P.O.'d. Rest of the time watched birds

Maclean
1964

Journal

trying to elbow their way onto a large flat
couldn't possibly support another bird —
and often did not make it! Murres were
more active and vocal than puffins,
which mostly sat quietly on the larger
rocks. Didn't see any puffin nests —
would like to. Finally quit and walked
home for dinner. Spent evening
putting up sunstry skins, including
raven collected on the way back from
bird cliffs.

17 August — Cape Thompson, Alaska

Mornings are for sleeping!

In the afternoon, moved traps
over to yesterday's canyon. I saw
M. oeconomus in the spot — surprising!
Hope these get sampin!

After setting traps continued on
with Rick south to bird cliffs.
Discovered there's two spp. of murres
there. Shot some, and discovered we
has both common and thick-billed.
Mine are all common — have to go back for
thick-billed. Blew a couple easy shots at
a passing tufted — one of about 3 seen.
Took a few hairs, threw the whole mess
in my parka, and struggled up the
hill. Checked the traps — zilch! Drove

Mackay
1964

Journal

the weasel back down the hill - about an 89° slope - and back. Spent the evening putting up day's kill, and finally hit the rack at 3:00 A.M.

Wind is still blowing - hasn't stopped since the night we arrived. Like to blow you off the top of the mountain. Makes bird chasing kinda rough. All the sea birds have to do is hold their wings out and they blow into the ocean.

Food here is tremendous - Clyde makes at least 4 pies every day for 10 of us (Clarence Dolan - Camp Manager; Clyde Bates - cook, Adam Roberts - Eskimo asst, Laughlingwell Eskigok - mechanic, 2 eskimo carpenters, 2 soils men from Ohio State working under AEC contract, and us-uns.)

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18 August

Cape Thompson, Alaska

A little slow getting going again. Finally got caught up on notes. Put up another murre, plus puffin for Chilos, then tries to get a few more kittiwakes. Too damn windy! Returned and read till dinner.

After repast, took weasel and beam back for bird cliffs. Weasel over-heated badly on the hill, so left it and walked most of the way. We also hauled a way

Maclean
1964

Journal

to see if maybe tufteds were more abundant on other cliffs. Not so, although found one cliff with almost exclusively horns. Returned to main (or closest) cliff and watched awhile. Discovered common and thick-billed murres intermixed completely on entire cliff - often touching each other on narrow ledges. Seems strange. Would estimate ca. 3 common per 2 thick-bills. Could see no evidence that birds know the difference. Collected horned puffin and 3 thick-billed murres, then headed home. That hill gets longer and steeper each day!

Cleaned up birds, then went out with Laughingwell to get weasel. Returned and read a bit before passing out.

19 August

Cape Thompson, Alaska

Wind still blowing.... harder, if anything. That, and lack of transportation other than feet, causes us to sit in and finish backlog of specimens. Mañana - out for more.

Clarence got our message through to Barrow this A.M. - get us out of here. Doubt if it'll do much good, but now we're obligated to stay fairly near to camp..... unless a real good trip comes up!

Jackson
1964

Journal

20 August — Cape Thompson, Alaska

Wind seems to be going down, but still ablowin'.

Decided to explore the river bed up the valley, so followed the meanderings on up, checking willow groves as I went. Expected to see Ptarmigan; not a damn one. Did see abundant fresh caribou and wolf tracks, semipalmated sandpipers, red phalaropes, northern phalaropes (collected one), short-billed dowitchers. Saw white-crowned sparrows for first time here. Shot a blue-throat, and gave it a closed casket burial on the spot! Wheatears and some kind of warblerish beast abundant. Follows creek about 2½ miles, to end of lower valley, then circles back up across and homewards. Scares up a short-eared owl; not too much else. Returns via the kittywalks, with no results.

Spent the evening putting up skins and reading.

21 August — Cape Thompson, Alaska

Wind has moved around to south, and quieted down. They say this is the bad weather direction. Looks it.

Put up one of Ptarmigan Rick

Macbean
1964

Journal

hao shot, then headed for bird cliffs. this time took telefoto lens, and used Rich's camera. First day it hasn't been sunny!

When birds were frightened off the cliff, a murre egg fell and broke. Found embryo ca. 30 mm - barely recognizable. Makes me wonder about synchrony - may be one sp. of murre is later than other (i.e. all chicks collected are one sp.), or periphery of colony (where this egg came from) is later than center, or breeding is asynchronous. Would be interesting to know. Both spp. of murres were on this ledge, so don't know which this is.

Watched, photographed, and took another puffin. Rich took 2 tufted puffins. Interesting thought - no puffin chicks on the ground. But then puffins are cavity nesters.

Spent evening putting up remainder of ptarmigans and skinning.

22 August

Cape Thompson, Alaska

The time has come to pack up and prepare to leave, although there's no telling when the plane will come. Packed, separated, and cleaned all. No more birds

Maclean
1964

Journal

put up, so we won't have to ship them wet.

During the day a geological party from British Petroleum, Ltd. moved in via Inferior Airways. Talked with their leaser - Norm Johnson, and learned much about geology, and fossils of the area. Rock of the area is upper Mississippian - mostly limestone. This is from a reef environment, and contains many fossil corals and echinoderms. He identifies several fossils we has picked up.

Didn't want to stray far, so spent the afternoon making squirrel traps. What an abortion! It'll take the world's dumbest squirrel....

Moosed two squirrels after dinner, then took a dram at cribbage. Went out bear hunting in the wood with Rick and Mary about 11:00. Drove up by beach and sat by walrus carcass... nothing. Came up and started home, and found one right by camp. Chased him down the beach, then lost him inland.

23 August

Cape Thompson, Alaska

Went down to bird cliffs briefly to record sounds and look for tufted

Maclean
1964

Journal

puffins, then went back to top of Crowhill (limestone ridge lining in bird cliffs) to look for fossils. Returned and ate. R4-D arrived as we ate. Packed up and took off. Stopped briefly in Kotzebue to pick up Charlotte Holmquist and Pete Sovolik, then flew on to Fairbanks.

Ran into Gary Strong and Steve Holland in Fairbanks Airport, so had a quick beer before they departed for home. Went into Fairbanks and sampled entertainment facilities, then spent the night in the Fairbanks Hotel.

24 August — Barrow, Alaska

Went out to University of Alaska and saw museum and biology department before heading for airport. Picked up Bobby Fisher, wife, and 5 kids, Cliff and Norma Alderfer, and misc. passengers; then took off for Barrow. Arrived ca. 6:30 P.M.. Unloaded, ate, then spent evening cleaning up gear and going through mail.

25 August — Barrow, Alaska

I have seen a lemming high! Went out with Tenaza to Voth area to look for birds and capture live lemmings. In one hour got 14

Lachlan
1964

Journal

lemmings, including 7 from area of ca. 40 fo. radius. Could have had more. The entire area is crossed and recrossed by runways and burrows. With this many animals going under the snow, could be a high next summer.

Saw flocks of red-backs-sandpipers, plus group of 4 semi-pals. 2 imm. jaegers in Voth area - voice was surprising .... almost plover-like.

Also checked Beach ridge - Plot area - not too much. 1 flock of longspurs - 1 of snow buntings, a few owls. Same story across Wohlsleg Slough. Finally driven in by darkness.

In our absence tundra has turned color - now a golden brown. It is still (tome, at least) surprisingly warm - ca. 45° today.

26 August

Barrow, Alaska

Decided to check low polygon areas as possible flocking sights. First checked Pow sight, then Holmes' Marsh — no flocks seen. Group of 4 red-backs, another of 5 dowitchers. Total of 10 dowitchers seen - most abundant shorebird. Two flocks of longspurs - not much else.

Maclean
1964

Journal

Returned and took Tenaza to airport, then spent evening cleaning up the mess of his departure.

27 August — Barrow, Alaska

I feel a cold a-brewin' in the back of mine head. Spent the day indoors trying to kick it. Cleaned up icebox - took stomachs and heads from old birds taken by R.T. pre-Thompson.

28 August — Barrow, Alaska

Nice try, but it didn't work. Got the g.D. cold anyway.

Went out with Keith Van Cleve to his lysimeters in central Marsh and on Beach Ridge. Group of 7 Brant in central marsh. 3 Dowitchers feeding in pond margin on Pitelka's Plot. Returned and helped H.S. pack up and clean lab. Now all are gone; glad I don't have to watch anymore go! Cleaned up all labs in evening, and sorted out gear to go back to stockroom.

29 August — Barrow, Alaska

Went out to Gasline Ridge area with Dick Nelson - an anthropologist going down to spend the winter at Wainwright. Lemming sign there, as

Macfan
1964

Journal

elsewhere, is greatly increased. Could be!

Can't say as much for the bird activity. One phalarope, 4 red-backs, 4 semi-peels in drum area, and 2 pectorals in same, plus owls. Walked low polygon, meadow, and ridge areas with equal success — namely, little. Picked up dead Dowitcher next to gas-line — apparently hit it in flight.

30 August — Fairbanks, Alaska

Went in to see Max about beginning work, and ended up on R4-D bound for Alaska Science Conference. Remained there until:

5 September — Barrow, Alaska

Back from conference, and out to the field, to see what one weeks time hath wrought. What it hath wrought is winter! Dark now at 8:00 P.M. the vegetation has lost all traces of green. Salix, esp. rotundifolia, is a bright orange. the grasses and sedges are all brown or red. Skim ice is lasting well into the day. Saw one flock of snow-buntings and several glaucous gulls. Primary and retrix molt is very evident in the gulls.

Set a line of 48 lemming traps

Mackay
1964

Journal

down the first ditch on Pitelka's Plot to check on reproductive activity. Sign is good - should be good catch.

7 September

Barrow, Alaska

Went out with Dick Hill director of "Canadian ARL" at Inuvik. Found 13 lemmings in traps. Closed up line, and moved some to drier area in hopes of catching Dicrostonyx. Curious when change to winter pelage occurs.

Saw 3 Pomarine Jaegers, 1 glaucous gull, flight of 4 dowitchers, and 1 phalarope. Longspurs have all departed; snow buntings still seen occasionally.

Returned and processed part of lemming kill, then wrote notes.

10 September

Barrow, Alaska

Out "lemming snatching" with Riley Sikvayugak. Went out to Voth area. Ground has a frozen "crust", but not yet frozen solid. Sign still abundant, and lemmings easily caught. Brought in 16 for ca. 1½ hrs. work.

Two immature pomarine jaegers still hanging around Voth area, gorging themselves. Large, loose flock

Maclean
1964

Journal

of ca. 100+ glaucous gulls along bank and floating on open water of Voth slough. Snowy Owls still at Cake-eater. Groups of 3 – 20 Red Phalaropes feeding in ocean, next to shore, in circle patterns. Has' all.

11 September — Barrow, Alaska

Large numbers of Old Squaws seen flying south, very low over ocean, ca 1/8 to 1/4 mi. out. Frequent lone glaucous gulls flying along shoreline.

12 September — Barrow, Alaska

Lemming hunting, again as before. Colder (ca. 30°). Fewer gulls, but in same place. Some jaegers, etc..

14 September — Barrow, Alaska

Failure to regulate temperature in animal house causes death of 1/2 of lemmings. Went out with Kris Moser (working for USC- Gentle's replacement on ARLIS) to try to replenish colony. Weekend has been cold - 10° - 25° = 20° today. Ground was now frozen solid. Could no longer stomp lemmings out of burrows. Hunted two hours in Voth Area..... not a damn lemming. Crossed Central Marsh - not too much sign there. Saw flock of ca.

Maclean
1964

Journal

14 Old Squaws land on S. Meadow Lake. Lake now 75% ice covered, with ice 2" thick near SW shore. Several Pomarine Jaegers - adult and juvenile - seen. Flock of Coots ♀♀ flew over.

Found large ♀ Dicrostonyx, 3 Lemmus in 7 traps still out. Owl still E. of Beach Ridge, others by gasline.

16 September Barrow, Alaska

On way into village, saw several very large flocks (ca. 250 ea) of Old Squaws. One flock on water (ocean) ca. 1/4 mi. out from village, another flying over same spot. Another flying S, close to camp. Group of 3 Sabine gulls flying south along coast. Several Glaucous gulls, also, flying nondirectionally along coast; ca. 20 at dump in lagoon. Lagoon now ca. 80% frozen. A few red phalaropes along shore.

19 September Barrow, Alaska

In to village - still Glaucous gulls at dump and along coast; 1 flock of ca. 100 Old Squaws on ocean out from village. Not much else.

23 September Barrow, Alaska

To village again. Only line to escape

S. MacLean

1964 - 1966

1964: water analyses

Maclean
1964

1964 Water Analyses

Procedure for salinity determination

Prepare 1 M. $AgNO_3$
127.50 g. / 1 l. distilled H_2O.
store in light proof bottle.
shake before using.

Titrate standard sea water:
5 ml. std. into 125 ml. Erlenmeyer flask.
add ca. 20 ml. dist. H_2O.
add 3 drops K_2CrO_4 soln.
titrate w/ $AgNO_3$ soln. until
irreversable rust color appears.

Titrate samples similarly.

Calculation:
If more than one trial / sample,
average values.

$$X = \frac{S \cdot K_x}{K_s}$$

$$\text{chlorinity} = \frac{(\text{chlorinity of standard})(\text{ml } AgNO_3\ X)}{(\text{ml } AgNO_3 \text{ used in std.}}$$

Salinity = 0.030 + 1.8050 Cl
Standard (Denmark) Sea Water:
Chlorinity = 19.373 ‰

Maclea
1964

Salinity = 0.030 + 1.8050 Cl.
from A. Defant: Physical Oceanography, Vol. I. (1961) page 39.

Maclean
1964

Imikpuk

10 December — Approximate center of lake.

snow depth - 7 cm.
ice thickness - 35 inches = 89 cm.
water temp - < 0° C.
Wx - clear ; -35° F.
Samples taken at 1100 AST.

SEA. SEA WATER:

4.4	4.5	4.45
125 - 81	236 - 191	179 - 134.5

Surface: 9.2 %

2.1	2.1	2.15
147 - 126	169 - 148	190 - 168.5

-2 ft.: 9.1 %

2.0	2.1	2.1
190 - 170	212 - 191	253 - 232

-4 ft.: 9.3 %

2.15	2.1	2.2
120 - 98.5	143 - 122	166 - 144

-6 ft.: 9.2 %

2.1	2.15	2.1
187.5 - 166.5	200.5 - 189	231 - 210

Maclean
1964

Imikpuk H_2O analysis

17 December Ice thickness - ~~84~~ 94 cm.
Snow depth ≈ 3 cm.

Samples taken at 1230 AST.
Wx clear; -20°.
Water temp: < 0° C.

Std. Sea Water: [19.373 ‰]

4.45	4.5
142 - 97.5	187 - 142

Lower surface of ice: Cl = 9.5 ‰

2.2	2.2
104 - 82	126 - 104

-2 ft: Cl = 9.6 ‰

2.25	2.2
172 - 149.5	149 - 127

-4 ft: Cl = 9.7 ‰

2.25	2.25
194.5 - 172	91 - 68.5

-5 ft. (bottom): Cl = 9.5 ‰

2.2	2.2
114 - 92	116.5 - 114.5

Maclean
1964

Imikpuk H_2O Analysis

31 December

Ice thickness — 109 cm.
Snow depth ≈ 10 cm.

Samples taken ca. 175 m. NE of pump house, at 1330 AST.
Wx - Clear, temp ≈ −35°F.
Water temp < 0° C.

Standard Sea Water: [19.373 ‰]

4.5	4.4	4.4
130 - 85	174 - 130	218 - 174

- 3 feet (bottom of ice): 10.8 ‰ Cl

2.45	2.5	2.5
113 - 88.5	139 - 114	164.5 - 139.5

- 5 feet: 10.5 ‰ Cl

2.4	2.4	2.4
189 - 165	90 - 66	115 - 191

- 7 feet: 10.7 ‰ Cl

2.45	2.45	2.4
140 - 115.5	165 - 140.5	189 - 165

- 8.5 feet (bottom): 10.9 ‰ Cl

2.55	2.5	2.45
91 - 65.5	115.5 - 91.5	141 - 116.5

Maclean
1965

Imikpuk water analysis

22 January

Ice thickness - 152 cm.

Samples taken ca. 175 m. NE of pump house, at 1130 AST.

Wx - blowing snow. Wind 30kts from N.

Water temp - <0°C.. Air temp - est - 10°F.

Standard Sea Water [Cl = 19.373%]:

4.45	4.40	4.45
178.5 - 134	11.6 - 7.2	16.05 - 11.60

-5 feet (bottom of ice): Cl = 12.5%

2.85	2.85	2.9
9.95 - 7.1	12.85 - 10.0	15.8 - 12.9

-7 feet: Cl = 12.7%

2.9	2.9	2.9
9.8 - 6.9	12.8 - 9.9	15.85 - 12.95

-8½ feet (bottom of lake): Cl = 12.5%

2.85	2.85	2.9
8.4 - 5.55	11.3 - 8.45	14.3 - 11.4

Maclean
1965

Imikpuk Water Analysis

13 February

Ice thickness: 162 cm.
Snow depth: 15 cm.

Samples taken ca. 175 m. NE of Pump House, at 0930 AST.
Wx - clear, ca. -32° F., lt. wind
Water temp: < 0° C.

Standard Sea Water: [Cl = 19.373 %]

4.4	4.5	4.4
140 - 96	185 - 140	120 - 76

- 5 ½ ft. (bottom of ice): Cl = 14.4 %

3.3	3.3	3.3
153 - 120	186 - 153	180 - 147

- 7 ½ ft: Cl = 14.4 %

3.3	3.3	3.35
87 - 54	202 - 189	114.5 - 111

- 8 ½ ft. (bottom of lake): Cl = 14.4 %

3.3	3.3	3.3
116 - 83	149 - 116	110 - 77

Salinity = 26.0 %

Maclean
1965

Imikpuk Water Analysis

20 March

Ice thickness: 173 cm.

Snow Depth: 16 cm.

Samples taken ca. 150 meters NE of Pump House

1000 AST

Weather: clear, est -8° F, wind N at 5 kts.

Water temp - <0° C.

New $AgNO_3$ soln. made.

Std. Sea Water [19.373‰ Cl]:

3.8	3.8	3.9	3.8
129-91	167-129	207-168	99-61

- 5½ ft. (bottom of ice):

3.7	3.8	3.8
103-66	143-105	183-145

- 6½ ft:

3.9	3.8	3.8
126-87	173-135	92-54

- 7½ ft:

3.9	3.7	3.8
135-96	173-136	212-174

Maclean
1965

Imikpuk Water Analysis

5 April

Ice thickness - 170 cm.
Snow depth - 25 cm.
Samples taken ca. 125 m. ENE of Pump house.
1400 AST.
Weather: overcast; temp -5°F.
Water temp: <0°C.

Standard Sea Water:

3.8	3.8	3.8	3.8
148-110	186-148	100-62	140-102

- 6 ft. (bottom of ice):

4.1	4.0	4.1
141-101	182-142	113-72

- 7 ft:

4.1	4.2	4.1	4.1
157-116	104-62	188-147	100-59

- 8½ ft. (bottom of lake):

4.1	4.0	4.0
72-31	117-77	158-118

Maclean
1965

Imikpuk Water Analysis

29 April

Ice Thickness - 155 cm.

Samples taken ca. 150 m NE of Pump house, at 1145 AST.
Weather - broken clouds. temp ca. +10° F.
Water temp: < 0° C.

Standard Sea Water:

3.8	3.9	3.8
123 - 8.5	163 - 124	128 - 90

- 5.2 ft:

4.5	4.4	4.4
74 - 29	122 - 78	179 - 125

- 6 1/2 ft:

4.4	4.5	4.4
83 - 39	130 - 85	177 - 133

- 7 1/2 ft:

4.3	4.3	4.4
86 - 43	132 - 89	179 - 135

S. MacLean

1964 - 1966

Journal:

1965 Barrow, Alaska
feeding observation tables

Maclean
1965

Journal

30 April

Barrow, Alaska

Begin summer season field notes with the arrival of the first snow buntings. Saw 3 ♂♂ in breeding plumage flying around Barrow Village. Made no audible sound. And a cheery sight, it was.

2 May

Barrow, Alaska

Walked out to Don Nusunginya's whale camp - about 1½ miles straight out from village. Saw 3 ♂ snow buntings in village dump on ice near shore. Some "chirping" noises, but no song. Climbed over 25 ft. pressure ridge to reach camp on edge of shore ice. Lead extends to limit of visibility - ca. 4 miles. One whale seen ca. 200 m. out. No pursuit. Saw flock of 12 geese (wing-beat too slow for ducks) flying NE up lead. Whalers reported seeing flocks of ducks - can't get any quantitative estimate out of them. A few belugas have been seen and shot at - none killed. Weather - cold and windy. Ca. +10° F, fog caused by heavy lead smoke, waves coming onto ice.

5 May

Barrow, Alaska

Walked out to Vincent Nageak's

Maclean
1965

Journal

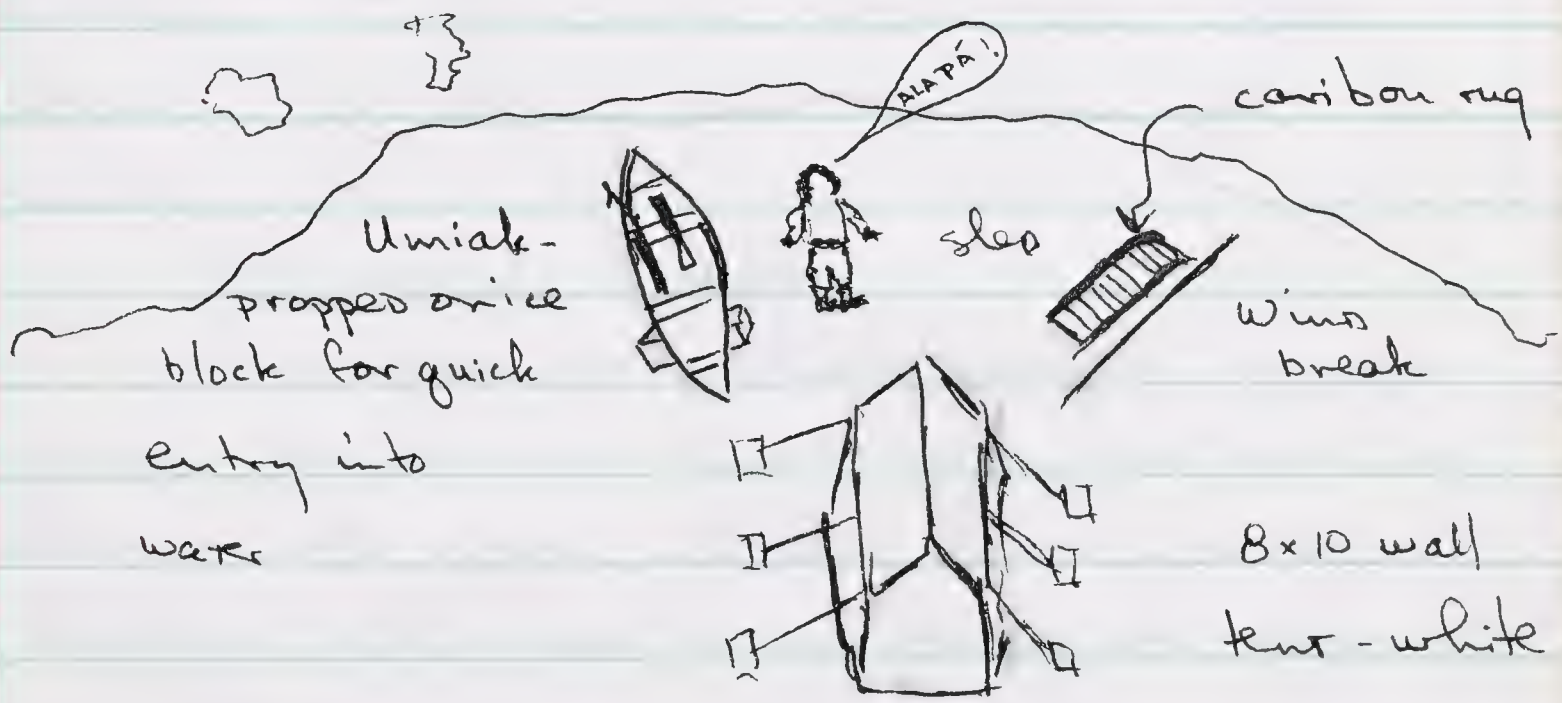
whale camp, ca. 4 miles SW of village. Lead filled with loose young ice - whaling not too good. Saw one flock of ca. 25 Eiders, nothing else.

7 May

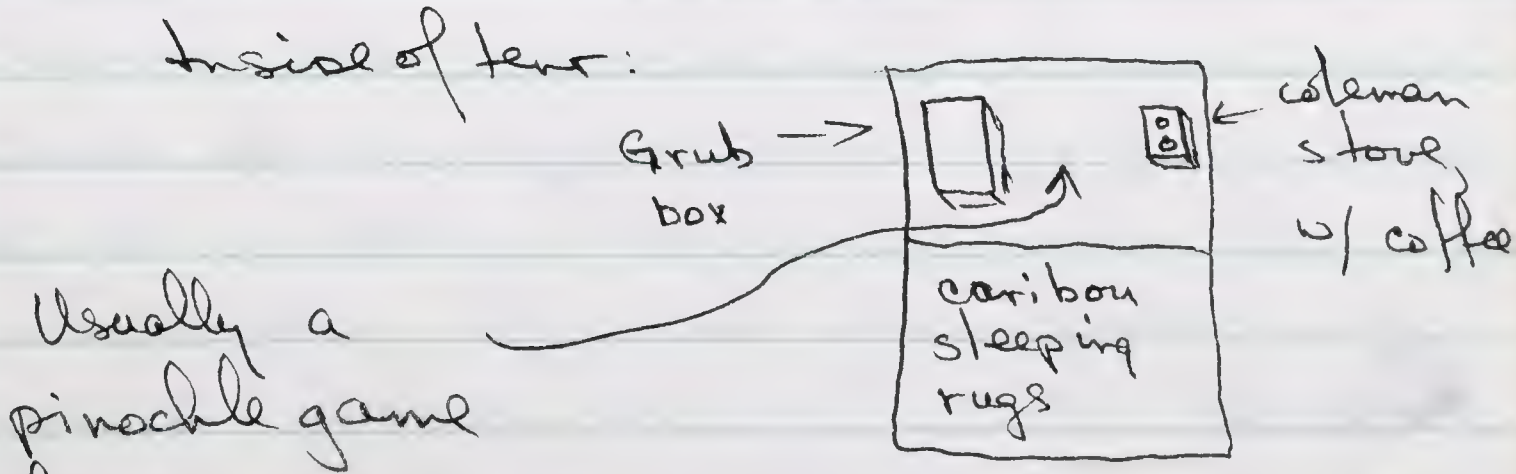
Barrow, Alaska

Again walked out to Vincent Nageak's camp, this time to spend the weekend. Snow buntings again seen in village dump. Found lead again closed with young ice. No birds seen.

this camp, like all others I have seen, looks about like:



Inside of tent:



Maclean
1965

Journal

7 May

The whaling gear consists of a brass harpoon gun, vintage 1860-70 and a hand harpoon which releases similar exploding harpoons. These supposedly explode ca. 10 sec. after the impact with the whale has triggered a fuse. In practice, they are extremely unreliable; 50% exploding would be a good average. Also around are conventional steel leases harpoons attached to inflated seal-skin poke. These act as floats to hinder the dives of wounded whales and help prevent dead whales from sinking. There are numerous rifles around for seals, and shotguns for ducks.

8 May

Barrow, Alaska

Remained at whale camp, hoping young ice would move away to open up leads. No such luck. Ice underwent lateral slippage and pressure ridging, but became more tightly packed. About 1000 bowheads of medium size came up in open pans in young ice, ca. 50 m. out. Blew 8 times, then submerged. Vincent and Hoover went out on young ice with dart gun and harpoon, but could not get close

Maclean
1965

Journal

enough. Rats! Saw other whales 200 to 400 m. away, but could not pursue. Finally left and walked home when ice jammed solidly.

9 May ~~April~~ Barrow, Alaska

First semblance of snow bunting song heard in camp - ♂ on top of telephone pole by t-5. Phrases short - ca. 5 sec - but who are we to be particular?!

12 May Barrow, Alaska

Pat Donnelly reported seeing flock of ca. 75 Eiders circle over Honeybucket Lagoon.

13 May Barrow, Alaska

Flew to Squirrel Camp on Kukpuk River, 14 mi. from Cape Thompson, with Shepard. Saw three groups of ca. 10 caribou each near Wainwright; about 8 caribou just North of Squirrel Camp. Wounded Eider near Wainwright. 2 ravens at Point Lay. Not much else alive.

Melt-off was essentially zero to Beaufort Hills, not much more than 5% around squirrel camp. Landed on frozen lake after a long careful look. Off loaded

Maclean
1965

Journal

supplies and hauled them to camp by river, then waited for Melchior and Phelps (Univ. of Wisc.) to finish writing letters.

This area will really be tremendous come summer. Nearly a complete variety of arctic habitats - river bar, low meadow, tussock meadow, ridges, cliffs - the works! From Melchior's descriptions, the variety of bird life matches this. According to his description, all of the Barrow Calidrines nest there - but in different habitats. Could be interesting comparisons. Hope to get down there later to have a look.

14 May — Barrow, Alaska

Flock of ca. 80 Eider circles over village airstrip.

16 May — Barrow, Alaska

Went out to check N. Meadow Lake owl nest. Now 4 eggs in snow cup on mound. Part of mound exposed, but area is essentially 100% snow covered. ♀ flew from nest when we were ca. 100 m.+ away - flew 200 m, then sat on oil drum. Did not want to overly disturb birds during

Nyctea

Maclean
1965

Journal

egg-laying period so drove on. Observed copulation in this and another pair of owls. Searches Beach Ridge, CRREL areas, then went home.

17 May

Barrow, Alaska

Two whales caught this morning down by village, so headed out after work. Turned out to be crews either side of Vincent Nagleaks. Vincent said that they lacked paddle-power; chased several whales during the run but couldn't catch up with any.

Saw first glaucous gulls of year by one of butchered whales. Numerous flocks of eiders. Vincent shot a ♂ walrus few days before. Stayed until 5:00 A.M. –, no whales, so walked in to work.

23 May

Barrow, Alaska

The past week has brought the first real melt. Camp is awash, and there is a moat around T-5. The tundra is beginning to emerge from the snow cover. Went out to Beach Ridge – only place with any appreciable extent of exposed tundra. Lemming sign – cut vegetation and tracks on the snow – extremely abundant. As index

Maclean
1965

Journal

of lemming abundance, tries walking to new area, stopping, and counting until lemming was seen. Averages 5 to 10 counts. Snowy owl now has 6 eggs. Saw short-eared owl; first longspurs. Longspurs mostly still in flocks. Gulls abundant and are hunting lemmings. Watches red fox in drum area on way in. Believe it is denning in or under one of AACS huts.

24 May — Barrow, Alaska

Saw 2 redpolls by animal house – first I've seen at Barrow.

26 May — Barrow, Alaska

Out to Beach Ridge and Pitelka's Plot. Jaegers have returned in good numbers, mostly sitting quietly or flying over tundra. No interaction with owls or other jaegers. Short-eared owl still on Beach Ridge. Nesting owls now have 7 eggs. Lemmings seen abundantly.

28 May — Barrow, Alaska

Brief check of Beach Ridge, then on to Gasline Ridge and Pitelka's Plot areas. Short-eared owl has left Beach Ridge. Snowy Owls still

Maclean
1965

Journal

there. Lemming sign extremely abundant on Gasline Ridge - large areas 100% cut. Animals very abundant. Pair of owls beyond N. end of traplines believed to be nesting or ready to start nesting. Saw first shorebirds of year - Golden Plovers.

Much lemming sign and many lemmings seen around CRREL area of Beach Ridge. Less sign and no lemmings seen on Pitelka's Plot.

30 May

Barrow, Alaska

Out again to check ridges. Essentially no melt in past 3 days; ridges and mounds are only exposed tundra. Short-eared owl seems to have moved on - again not on Beach Ridge. Observed breeding behavior of Snowy Owls on Gasline Ridge, then located owl nest w/ 4 eggs.

Continued NE along edge of Central Marsh. Found several piles of dead lemmings - piles of 34 and 50 ca. 65 m. apart; another pile of 30 ca. 400 m. beyond. Believed to be work of Pomarine Jaegers. Owls very evenly spaced and consistently paired.

Maclean
1965

Journal

No other nests found.

Found recently killed and partially eaten ♀ ptarmigan. Another (live) ♀ ptarmigan on Pitelka's Plot. No shorebirds of any kind seen. Caught a number of lemmings – they are <u>much</u> larger than any I've seen previously.

Jaegers seem to be pairing off and have begun territorial squabbling. Making noise for first time. Still no interaction w/ owls.

Arrival of shorebirds is later than I had expected. Actually, this is good, since it means we don't miss so much by arriving in early June.

Longspurs are still seen mostly in flocks. Snow buntings seem to be paired.

31 May

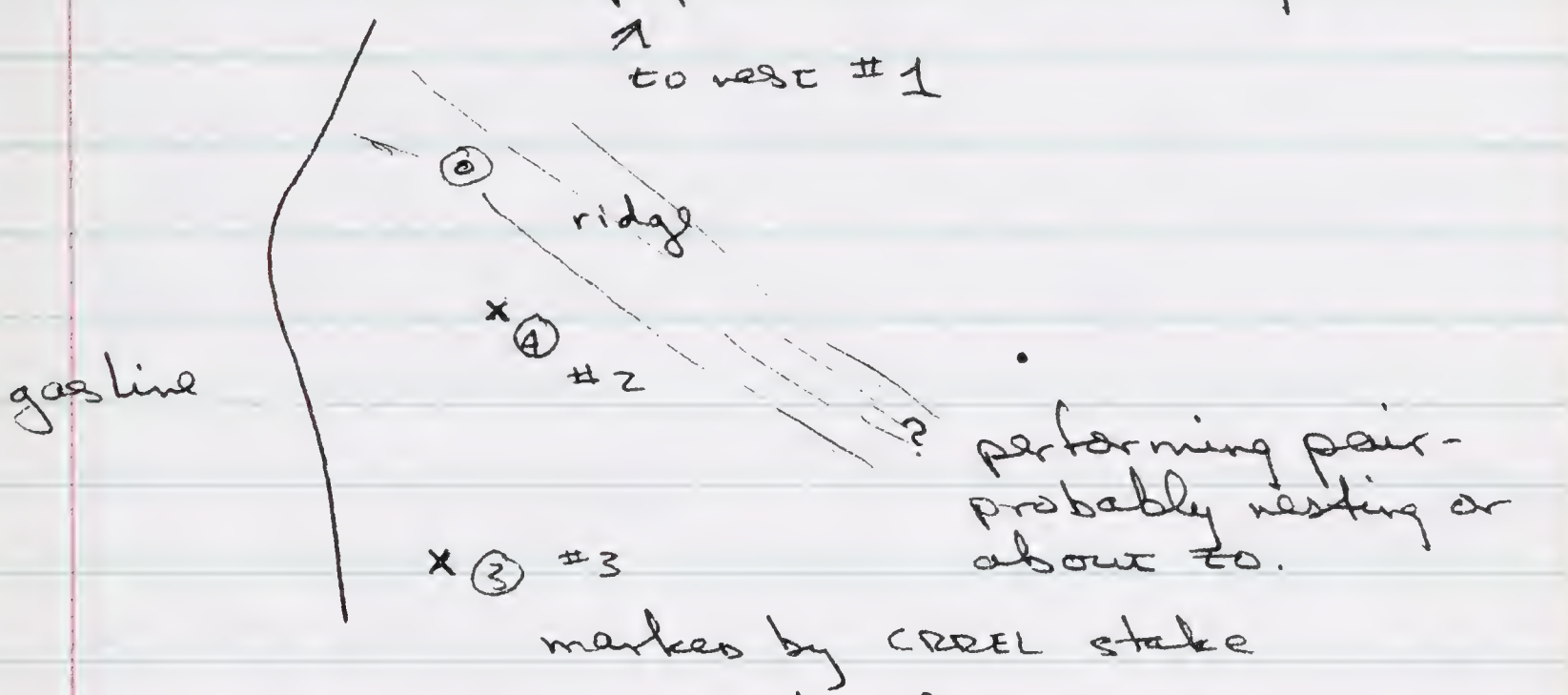
<u>Barrow, Alaska</u>

Beach Ridge very quiet, so on to Gasline Ridge. Pretty quiet there, too! Walked length of ridge without seeing a shorebird. Owls still on top of ridge above mound where ♀ gave distraction display yesterday. Determined definitely that new nest belongs to pair occupying W end of ridge, including big mound at end of

Maclean
1965

Journal

traplines. Followed ridge, then shifted to South and found 3 egg owl nest back towards pipeline. Location of nests:



Second nest still has 4 eggs.

Conditions cold, windy, and foggy. Went in.

1 June – 4 June - Nome, Alaska

In Nome attempting to capture lynx kittens previously located at Pilgrim Hot Springs by Harvey Wieler. Warm (50°-55° F.) sunny weather for entire trip. Flew out to Springs in borrowed Super Cub and found ♀ lynx has moved kits. Spent one entire night looking and even came face to face with mother, but no luck. Saw abundant ducks – pintails, greater scaup, American wigeon, shovelers. Also Northern Phalaropes, Wilson's Snipe,

MacLean
1955

Journal

[Spotted sandpiper - 1 only]
willow and rock ptarmigan, cliff and tree swallows, tree sparrows, chickadee (grey-capped?), 2 possible Osprey nests (1 with ca. 1 ft. long fish below).
Lynx tracks very abundant; also rabbit (sometimes attacked to rabbit), fox, and fresh moose tracks.

Vegetation - cottonwood grove around springs, alternating with and surrounded by dense willow thickets 5 - 7 ft. high.

In flying around area saw abundant ptarmigan plus lesser Canadian Geese, Whistling Swans, and a few Sandhill Cranes.

5 June

Barrow, Alaska

took parents out to see the tundra. Found it virtually unchanged in my absence no noticeable new melt. Went out to Beach Ridge to observe jaegers and owls. Pair of owls is back ca. 200 m E of micro-met. ♂ gave one dracula display for the tourists, w/out lemming. Jaegers mostly sitting quietly; one territorial dispute. A few lemmings were seen, but not anywhere near the number seen when ground first became exposed, before arrival of

Maclean
1965

Journal

predators. No shorebirds, and only a few longspurs and buntings.

Checked owl nest #1 - still healthy, w/ 7 eggs and two lemmings. Owl nest #3 still has 3 eggs, ♀ sitting happily. Maybe that will be all. Dead least weasel by nest, still completely white! Owl nest #2 now has 7 eggs. Marked it with short stake.

Looked for piles of lemmings where seen previously - no luck. No shorebirds seen in this area either. Met Dr. Pitelka and spoke briefly, then drove in past nest #1.

Parents seemed impressed by tundra lemmings, etc.. Wish I could have shown them shorebirds. They were bothered by cold, which limited hiking cross-country.

6 June

Barrow, Alaska

Saw flock of ca. 20 ruddy Turnstones flying actively around camp dump on way into town. Weather yesterday was very nice - sunny, ca. 32°F., wind not too bad. Today - wind increasing and becoming uncomfortable, heavy

Maclean
1965

Journal

overcast, colder.

7 June — Barrow, Alaska

Saw flocks of 6 ♂♂ and 5 ♂♂ + 1 ♀ King Eider flying SW over camp area. Apparently have completed their task and begun "fall" migration.

10 June — Barrow, Alaska

Delivered parents to plane heading South last night, then worked to clean desk of paperwork. This afternoon spoke with Brewer regarding more time for field work. His receptiveness to the idea surprised me: Even I volunteered to release time without requiring pay. Spoke with Pitelka and he advised I press for ½ release time. I'm not sure if I have the nerve to ask for it - will find out tomorrow.

Went out with Pitelka and Paul De Benedictis - new bird-type assistant. He has much birdwatching experience and seems to know the beasts very well. Should be a big help.

Saw flock of ca. 18 Pomarine Jaegers - SE corner of central marsh. Another flock of ca. 20 on N. side of

Maclean
1965

Journal

mouth of Wohlslag Slough. Looks like cold, windy, miserable weather of past 4+ days may have discouraged them by making lemming hunting more difficult. Some territorial aggression within flocks indicates that they haven't give up entirely. Many (ca. 1/2) of birds sitting quietly; others standing or hunting in nearby area.

Observed ♂ owl in dracula display with lemming in mouth by S. end of Beach Ridge. Checked nest - formerly 11 eggs, now 9. In same area observed (rejoice!) 2 magnificent red-backed sandpipers feeding actively on melted patch of tundra. Saw total of 9 red-backs, 3 turnstones, 1 golden plover, 1 ♂ pectoral. Spring has come at last.

Continued to East edge of Holmes' Morass to observe owls. Observed 1 beautiful rotating dracula. Surplus of birds in area - 6 visible in 180° turn from edge of lagoon - indicates non-breeding individuals mixed with obviously breeding birds.

Weather foggy, but above freezing with much less wind. Tundra

Maclean
1965

Journal

emerging rapidly.

11 June — Barrow, Alaska

Spoke with Brewer this afternoon regarding time for field work. Asked for ½ time, and he agrees. Just like that! Have to make sure I take full advantage of this unexpected opportunity!

Prepared materials for field preservation of stomachs – 10% formalin injected down esophagus. Weasel broken down, so walked through drum area to west end of Beach Ridge w/ DeBenedictis. Very little seen going out through drum area. In polygons at W. end of Beach Ridge (Stevens' plots) saw 1 Semi-Pal, at least 2 Baird's, 2 red-backs, 1 turnstone, 3 red phalaropes, 1 golden plover. Just about everything seems to be showing up, even if not [yet] in great numbers. De Benedictis sighted tree sparrow. Short-eared owl in drum area on way back.

12 June — Barrow, Alaska

Went out with Pitelka to CRREL area and worked from there to mouth of Wohlsleg slough, then North

Maclean
1965

Journal

along edge of Holmes' Morass. Loose flock of 25± redbacks plus several dispersed redbacks. Several pairs golden plovers. As Pitelka waited to go in, found pair of sanderlings feeding on high ground, 1 ♂ pectoral, and lear baird's.

In the evening discussed feeding program with entire group, making major alterations. Will attempt sequential 5 second feeding observations. [Will save detailed description until final method has been determined.]

Melt off is continuing at a rapid rate - the ridges are ca. 66% exposed now, and even parts of Central Marsh are appearing. Barring a change in the weather, the season may catch up with itself. It remains to be seen what the delay will do to shorebird populations.

Saw quite a few lemmings today - most since 23-24 May when the tundra first emerges. Lemming distribution is definitely spotty, although cutting is general.

13 June

Barrow, Alaska

No functional weasel today, but couldn't let the Sunday go by, so

Maclean
1965

Journal

started walking. Not too cold - ca. 35° - but about 10 mph wind from East. Through drum area - saw sanderling, few baird's, semi-pals and red-backs in moderate numbers. Semi-pals and red-backs displaying. Saw ♂ pectoral on ⊗. and of ~~area~~ gasline Ridge. Walked to Beach Ridge, through Volk Area, and down gasline Ridge - saw only occasional red-backs. those seen were setting up territories - aerial displays and ~~at~~ chases frequently seen. At upper Wohlsag Slough encountered loose flock of red-backs plus 1 red phalarope ♂.

Took feeding data of golden plovers, red-backs, and phalarope. Found 5 second observations extremely difficult to use with any accuracy. Birds were remaining in same feeding habitat, so that successive 5 second observations were same as initial observation. This consistency should allow longer observation periods without endangering accuracy. Big problem in observation is not where but <u>how</u> birds feed.

Saw even more lemmings today. Seem to be exposing themselves for longer periods of time. Could often hear lemming noise coming from under snow patches.

Walked back across Central Marsh

Mackay
1965

Journal

and found 6 eggs + 1 pink, downy chick in first snowy owl nest. Seems strange, since owls are still courting and jaegers are not even down to territories. That early melt could have triggered owls early, creating an abnormal spread in predator breeding chronology.

Returned home just in time for dinner. Later, discussed shorebird feeding program, and ± agreed upon method, as follows:

When a shorebird is sighted feeding an immediate mental note is made of location. Observer then attempts to maneuver into favorable observation position. If bird flies at this time, the character of location where bird was feeding is recorded, and observer moves on to another bird. Even tho' flying before detailed observation, the bird has supplied a useful datum - one observation of feeding in a certain habitat. If bird remains after observer has reached favorable ~~[illegible]~~ observation point, observer carefully notes feeding style (i.e.- peck, jab, probe, or mixture thereof), then begins a 30 sec. count of feeding motions. 30 sec. counts are repeated to maximum of 5 unless bird flies 10 ft.. During each 30 sec.

Maclean
1965

Journal

period observer carefully notes location. At conclusion of 5 x 30 sec. observations observer characterizes habitat for each observation, and records. If bird flies 10 ft. before 5 are completed, observer characterizes habitat for each complete observation, then begins another series on same bird or moves to another bird. Maximum of 5 series (series = set of observations ending with 5th 30 sec. period or flight) for any one bird. If bird flies during 30 sec. observation period record (noting time observed) if over 15 sec; discard if under 15 sec..

This method will allow quantified observation of feeding technique, which was never achieved last year. Methinks it will be an improvement, although only application can tell for sure.

Definition of habitat will be essentially as last year, with slight changes, and new symbols in recording. This is to be worked out mañana, as none of us could stand more haggling over this whole thing now.

14 June

<u>Barrow, Alaska</u>

Working at work, mostly on the radio for plane going to T-3, then took off in afternoon for N. Wohlslag

Maclean
1965

Journal

Slough again. Snow is continuing to melt, although it was cold and windy. Saw group of 50+ jaegers sitting on snow around SE corner of Central Marsh. Other jaegers still on Wohlsleg Slough.

Terretorial redbacks around CRREL wanigan - chasing, w/ several aerial displays. Again encountered flock of redbacks closer to lagoon. Collected feeding observations on these using 30 sec. method. Found it much more satisfactory - easier and more accurate. 1 Buff-Breast, 1 sanderling, ♂ + ♀ pectoral near mouth of Slough. Collected feeding observations on all.

Concentrated on field notes in evening, plus usual discussion concerning shore-bird methodology.

15 June

<u>Barrow</u>, <u>Alaska</u>

Weather really lousy - cold, w/ wind blowing like h---! Prepared for stomach preservation and removed stomachs from 5 donors, then went out to Gasline Ridge. New and/or blown snow has covered virtually all previously exposed tundra on windward side of mounds and ridges. We're losing ground on this darn snow!

Maclean
1965

Journal

Ran first transects of traplines 1 + 2. Easy; results – nothing! Lemmings abundantly seen; saw 12 in one bare patch ca. 20 ft. diameter in 1 min.. Checked owl nests. Nest with three eggs May 30 and 5 June now has 7! Apparently she resumes laying after taking a few days off. Should produce interesting hatching results.

In the evening went out with Hamilton to Drum Area to look at questionable peep. Found it. Very little coloration on front of breast. Looked like possible rufous-necked. Collected it. It wasn't! Turned out to be sanderling – immediately obvious when in hand. Oh well.

After Pitelka and DeBenedictis returned from Ogrenino!, went over shorebird notation system. At their ~~assis~~ insistence, added categories for forbs and height of dead vegetation, modified others. I disagreed (and still do), believing they are adding non-functional categories that only confuse matters by increasing amount which must be recorded and analyzed.

Anyway, system is now as follows: Record Date, observation number (birds observed, numbered consecutively

Maclean
1965

Journal

throughout season), and time (in one hour intervals; 8P = 8:00 P.M. – 9:00 P.M.)

then: Topography –

f = flat or level ground, or gentle slope.
m = mound
ch = channel between mounds
lp = low polygon
rp = raised polygon
tr = polygon trough
po = pond
st = stream bank
d = disturbed – used as modifier.

Vegetation:

0 = bare ground
+ = moss + lichens only
1 = cover less than 25 %
2 = cover 25 – 50 %
3 = cover 50 – 75 %
4 = cover 75 – 100 %

Cover expressed as graminiform cover/forb cover, as 2/2.

Understory:

U m = moss
U ml = moss + lichens
U b = bare

Maclean
1965

Journal

Lemming activity:

C_0 = no cutting
C_1 = small amount cutting
C_2 = moderate amount
C_3 = near total cutting
C_{GR} = grubbing

Height: actual average maxima, in inches, of dead vegetation / living; as 2/1.

Moisture:

pw = pond water
sw = standing water
sat = saturated
w = wet
d = dry

Style: count of pecks, jabs, probes plus all other pertinent observations in 30 sec. period.

Sample observation:

sp.	obs. #	time	top	moist	veg grass/forb	under	Lem	ht dead/liv.
a	092	5A	lp	sat	4/0	ml	2	1/3

14 ser jab (3-8) + 2 peck.

Maclean
1965

Journal

16 June

Barrow, Alaska

Got stuck with BuDocks people all day, and didn't get out to tundra until evening. Weather still lousy - ca. 28° and blowing. June 16 and the tundra is still 85% snow covered. New and drifting snow continues to cover previously exposed areas making them unavailable to birds and lemmings. Found absolutely 0 along Beach Ridge and Holmes' Marsh, then found pocket of activity between Brant Pt. and Wolleleg Slough. took feeding observations on flock of ca. 40 red backs, plus turnstones, whiterump, pectoral, semi-pal, and golden plover. System seems to be working - major obstacle is getting observer off his tail end and into the field.

17 June

Barrow, Alaska

Spent day finishing off with BuDocks people, then writing notes. In the evening went to movie. Should have gone to the field. Then, on to field notes for several hours, transcribing previous shorebird observations to new system. I wonder if it is ever possible to write enough and keep caught up...

18 June

Barrow, Alaska

After morning in the office went out and worked Holmes' Marsh for shorebird feeding observations. Weather much

Marlin
1965

Journal

improved - ca. 38° with much less wind. Had expected an improvement in weather to bring sudden burst of shorebird display. Didn't work out that way. This convinces me that this will simply be a lousy year for shorebirds, prior. Saw some red-back display, but not much more. Found moderately good feeding behavior in same area as last night - near Brant Point. Two pr. Sabine's Gulls, first Yellow-Billed Loon.

In the evening went to Nalakturuk in Village - really outstanding!

19 June

Barrow, Alaska

A good evening and day of melt have brought the tundra about to June 9 or so last year. Went out to Voth area with Pitelka to observe and collect shorebirds. Did fairly well, although even under perfect conditions heard amazingly little display. First Pectoral aerial display, plus white-rumps, red-backs, and Semi-pals. The only birds which appeared to be comparitively numerous are ruddy turnstones.

Saw first Arctic terns and

Maclean
1965

Journal

Steller's Eiders.

Collected 5 red backs, 2 white-rumps, 2 semi-pals, 1 pectoral after feeding observations. Again saw many, many lemmings. Jaegers appear gorged! Two jaeger nests w/ 1 egg each found. Also found new owl nest w/ 7 eggs by N. edge of Footprint Lake.

Observed one pond in Voth Area with beautiful + continued separation of feeding species: 3 red-backs in pond water ca. 1" deep; ♀ pectoral at pond edge; 2 semi-pals ca. 2 ft. back from pond edge in saturated ground.

20 June — Barrow, Alaska

Back to cols, miserable weather. After morning at field notes, took off with Pitelka. Stopped around micro-met - very quiet. Pair baird's in raised polygons, pair Golden Plovers, pair red backs. Honeybucket Lagoon owl nest is hatching - two out + 1 broken open. Egg tooth very evident on all three.

Continued on to Gasline Ridge - worse. Ran traplines #1 + 2 for shorebirds. Found nothing. Saw a few red backs chasing, no more.

Maclean
1965

Journal

Found a few shorebirds in area S. of Central Marsh, and observed, then to latitude of Ookpik Slough for owl check. Found 1 new nest to fill hole, then came in.

Spent the evening at the cinema - Phaedra - then writing field notes.

21 June

Barrow, Alaska

Took off right after early lunch for aerial recon of area. It soon became evident from jaeger concentrations that lemming high is a local phenomenon. Good jaeger density to region of Sungovoak Lake; Meeratk density to Inaru, very sparse thereafter. Found jaegers sparse but regular along coast to Wainwright, with local concentration at Wainwright. To East - numbers good from Iko Bay to POW; very low East of Iko Bay.

Snow cover from the air was truly impressive - ca. 80%. Can't blame the shore birds for not wanting to stay!

In the evening walked out through drum area to marsh N. of micro-met. This marsh has suddenly

Maclean
1965

Journal

emerges from the snow cover, and is covered with standing water. Good pectoral country, going to waste. Found 2 ♂♂ and 1 ♀ pectoral there. They were trying, tho'. 2 good ♂ ♀ chases, plus several aerial displays. Semi-pals common here. [Semi-pals are only Calidris with numbers equal to last year.]

Observed semi-pal and pectoral feeding in same pond. Semi-pal feeding along edge - obviously using visual cues. Pecking singly with visual search, moving and turning head, w/ "half-pecks" as if to see better. Even when jabbing - done mostly singly in loose litter with appearance of visual cues. Pectorals were probing in suspended litter - probably tactile cues. Probe rapidly around 1 spot, with no apparent search movements. 3-8 probes / series. Could not have been aiming at anything in particular. Wonder if pectoral has evident sensory organs or larger sensory trunk in bill than does semi-pal. May be able to tell by fixing and staining sections of whole bill. Have to check on this.

Maclean
1965

Journal

22 June

Barrow, Alaska

Went out to Pitelka's Plot in cold, dense ground fog. Stopped at N. end; Hamilton went NE, I cut straight across Holmes' Marsh towards Elson Lagoon. Marsh is still 99% snow covered, and devoid of bird life save jaegers. Area near Elson Lagoon is still opening up. Many more phalaropes there than before. Otherwise, 1 pr. golden plovers, 1 pair pectorals, 1 pr. turnstones, few terrestrial and non-terrestrial redbacks. Collected feeding observations and found two jaeger nests. Saw pair of spectacled eiders down on pond in Marsh - first I've seen close up on ground.

Wrote notes during movie, then took Hamilton and DeBenedictis out to where I had seen specs. They were no longer there. Fog has disappeared, leaving beautiful clear but cool and windy weather. Found 3 jaeger nests and observed shorebirds, then came on in.

23 June

Barrow, Alaska

Out with Pitelka to Voth area to collect Calidrimas for breeding

Maclean
1965

Journal

phenology and feeding data. Weather cool and windy, but not too bad after what this month has produced. Found almost nothing all afternoon. Britton's area blank; few red-backs and semi-pals, occasional pectorals + golden plovers in Usth low polygons. Collected ♀ pectoral. All in all, not a productive afternoon!

24 June

Barrow, Alaska

Weasel out of commission again so worked through drum area to AACS and micro-net marshes. The snow is still trying to melt, and it is getting to the wet stage. Much bairds display in drum area. ♂ pectoral (with no ♀ in sight) by AACS. Did not display. Semi-pals most abundant shorebirds in this area; at least three pairs seen. Still display, both in air and on ground. Phalaropes are increasing in numbers. Collected feeding observations out and in.

Spent the evening at Chamber of Commerce meeting - supposedly Schinsler's swan song, but no quorum so no elections.

Nelson
1965

Journal

25 June

Barrow, Alaska

Has to play tour guide during the afternoon, so waites until evening to hike for micro-met area. Finally got a good warm day with little wind - very pleasant to work in. For the first time it is possible to walk the length of Beach Ridge from micro-met to C&GS without stepping on snow (except for man-made ditches).

Birds were acting most un-25 June-ish. Heard good display of C. alpina, melanotos, bairdi, pusillus, fuscicollis, plus Pluvialis and longspurs. ♂ pectoral near AACS gave good courtship chase and display, then drove away displaying red-back and white-rump. Also saw courtship chase in semipal and red-back. Saw a total of 6 displaying pectorals - most seen to date. ♀♀ are still rarely seen. Phalaropes are still increasing and acting perfectly 10th of June - paired in social flocks, with occasional competition over ♂♂. Walked up to ~~[illegible]~~ North end of Pitelka's Plot to look for Curlew Sandpiper - no luck. Finally walked back down the Ridge and in.

Maclean
1965

Journal

26 June

Barrow, Alaska

Beautiful clear, warm weather. Drove out towards Pitelka's Plot and found Central Marsh has become Central Lake. The cold water and relatively warm air was causing a dense ground fog pouring off of every wet area; i.e - all of central marsh and Holmes' Moors. Was really impressive, MacBethish, but knocks vizibility way down.

Checked for Curlew Sandpiper but couldn't see much through the fog. Walked straight across the Morass. In a little over one day it has gone from 90% snow cover to 10%, and it is really wet! The low polygons in the West end are all flooded, and the entire flat East end is under 4 to 6 inches of water. The fog pouring off of the water made observing near impossible. East edge of the morass was perfectly clear, due to the East wind which moves the fog westwards (for some reason the lagoon was not fog producing). Found a convenient dry polygon and spent some time checking

Maclean
1965

Journal

for aerial fly catching sandpipers; there were none. As temperature dropped the fog diminished, allowing some constructive work. Worked down to Lewellyn's Wier. The water is pouring through "Dam Beck" at an impressive rate, but there is a lot of water out there! Drove in around dinner time with CRREL boys (John Dennis and Art McKee).

27 June

Barrow, Alaska

Out after lunch to look at AACS-Micro-Met area. Found flock of ca. 18 (± 4) Pectorals acting happy and normal..... for about June 9! Group covered ca. 3 acres, feeding in flooded tundra. Sporadic aggressive behavior, ground displays, aerial displays, and courtship chases. ♂♂ appeared to be beginning to isolate selves and compete for ♀♀. This season is going to be more interesting than I had thought a week ago.

Flock of 6 golden plovers + 1 black-bellied plover in same area as pectorals. All other shorebirds were well spread out and paired. Rear-back display is falling off rapidly; methinks they

Maclean
1905

Journal

are on eggs and/or are laying. Baird, semi-pal + white-rump display seen, but evidence of nesting also seen in all spp.. Hamilton and DeBenedictis have been concentrating on finding nests - 8 Calidrines today, mostly semi-pal.

The melt continues at a tremendous rate, and runoff streams are everywhere. Largely only protected slopes are left with snow cover.

28 June

Barrow, Alaska

Out in early afternoon to observe, photograph, and collect Hudsonian Godwit found in ARCS marsh. Black-bellied + golden plovers and pectorals still there. Pectorals are possibly more dispersed, but not markedly changed. Observes several aggressive chases and displays among ♂♂. Photographs Stellar's Eiders, then walked down Beach Ridge to see if birds have moved onto newly exposed grounds. They haven't.

Returned to West Beach Ridge and watched Baird's, then located 2-egg red-back nest. Walked back via Pectorals.

In the evening went out to

Macken
1965

Journal

traplines 1 + 2 with Pitelka and Hamilton. Ran shorebird transects, then putzed around area while they cleared trapline. Found Baird's nest w/ 4 eggs - completely exposed on lichen covered mound on top of Gasline Ridge. Also marked jaeger nest w/ 2 eggs E. of end of traplines. Came in ca. 10:00 to write notes.

Another good melt day leaves very little snow on the tundra.

Display of everything but pectoral has fallen dramatically in the past 3-4 days. All others are largely down, and some pectorals are likewise.

29 June

Barrow, Alaska

One of those days that Barrow sees too few of. Clear, warm, calm shirtsleeve weather. The snowmelt is now virtually complete, with only isolated patches of snow on very protected slopes and around buildings where drifts were deepest. The tundra is draining and drying at a rapid rate. This must be the fastest melt in recent years.

Walked out through drum area to ARCS marsh to check on pectorals. They are further dispersed, with behavior

Maclean
1965

Journal

as before - 2 and 3 ♂♂ chasing 1 ♀, moderate amount of display, mostly just feeding. Flock of plovers now ca. 11. Interesting - two flocks in same area - one made up of non-breeders and possibly early failures, the other of ± newly arrived birds which are beginning breeding activity and still may breed extensively. This would not be unusual down South, but very strange up here.

After feeding observations on pectorals continued on to Beach Ridge to again check to see if birds have occupied ridge. On the way found a white-rump nest w/ 4 eggs in AACS Marsh. Found 1 pair of red-backs on N slope of ridge, probably at egg laying stage. Pair of pectorals farther E, nothing else. Apparently ridges are not going to produce this year.

Went down into Central Marsh near C & G S and found larger flock of pectorals than AACS, about at same breeding stage. Still social, but aggressive interaction between ♂♂ and frequent chases and

Maclean
1965

Journal

grouse displays. In same area - large group of golden plovers, many, many phalaropes, group of ca. 7 Dowitchers. Farther out into marsh were many Jaegers. Marsh was more active than I have ever seen it.

Saw unknown plover like bird which fits nothing in Peterson: about size of knot, colores like a big wheatear - very white below, uniformly grey above, a broad dark line through the eye, and some form of upperbreast marking or coloration. Has a white band at the proximal end of the tail, or possibly rump.

Spent the evening at Chamber of Commerce meeting getting Schindler out of office. Finally succeeded - and will now resign from the Chamber.

30 June

Barrow, Alaska

Paul saw mysterious plover and concurres in description so out we went to collect the beast. Pitelka got one shot just as the bird flew, but missed. Bird took off for far away lands. Did see it well enough to positively identify it

Maclean
1965

Journal

as a Mongolian Plover. Probably Easternmost and first Point Barrow records, and one of about 10 (Gabrielson and Lincoln list 7) in North America.

Also observed many Western sandpipers, rufous-necked sandpipers in Central Marsh, as well as Phalaropes, pectorals, golden plovers. Much activity in pectorals - one or raising all kinds of trouble.

Went back to set traplines 9 + 10, then returned to Lab to prepare for Murphy's' farewell party.

After dinner played softball game in the village, then returned to catch the end of the party. First rain of the year fell during ball game, and sporadically through the evening.

Hamilton and De Benedictis are doing well at finding nests, and are finding both smaller clutches than normal and increased time between layings. Interesting aside that shorebirds are having trouble finding enough food. Will be interesting to watch pectoral clutches, if we find many.

~~Bob~~

~~Tuesday~~

Maclean
1965

Journal

1 July

Barrow, Alaska

Sacked out most of afternoon, due to lack of sleep for involved reasons last eve. Walked out through Drum area after dinner while others went to flick. Found semi-pal nest w/ 4 eggs by Jamesway hut at end of Drum area. Watched another pair of semi-pals and pair of bairds, but failed to locate nest. Checked on AACS Pectorals - seem to be in no hurry to get on with breeding. Still largely social, with bursts of sexual activity.

Checked Micro-Ter red-back nest - now 4 eggs, 3 normal, 1 abnormal. White-rump nest is now empty. Damn!

Met Hamilton + DeBenedictis checking lines 9+10 and rose in. Big discussion of progress of project to date, mixed with interesting bull shit. Everyone seems to be fairlywell satisfied. Have to hit shorebird transects harder.

2 July

Barrow, Alaska

Took our Eagle Scout out to the tundra. He is just at the super-sophisticated and witty stage - not an easy one to accomodate on a deal such as this. Refuses or is afraid to

Maclean
1965

Journal

show any initiative - such things as getting field glasses, directing attention in the field, or asking questions. For instance, I pointed out a jaeger settling brood patches over eggs. He nodded - yes, yes. After a delay, I asked if he knew what brood patches are. He said no. Yet he hasn't queried when I mentioned them previously. All in all, not a bad trip but a long way to go.

Found jaeger nest in NACS marsh - two eggs. Checked pectorals - seem to be less birds, and less reproductive activity. Only 1 courtship chase - 4♂♂ + 1♀.

Continued through upper Micro-Net marsh - found longspur nest w/ 5 eggs. No shorebird activity. Checked Maybucket Lagoon owl nest, then circled back towards micro-net. Found golden plover nest w/ 4 eggs in polygons ca. 250 m. W. of micro net; jaeger nest w/ 2 eggs on S. side of gasline near wanigan. Checked red-back nest - 4 eggs. Headed through marsh and in.

Finding many pressated nests now - much more numerous in lowlands than on early exposed ridges. Ca. 50% of

Maclean
1965

Journal

nests found today were predated. I am sure that the least weasel is a significant lemming predator.

After dinner went out to traplines 9 + 10 with Hamilton. Bird life fairly quiet, except for one burst of white-rump activity. AACS golden Plover flock now numbers 23, sitting quietly.

3 July

Barrow, Alaska

Went out through drum area and encountered Bob Biggers, eagle Scout. Decides to explore new territory to see if shorebirds are moving in. Covers polygonal area N. of Beach Ridge - nothing. Checks rough-back pair on N. slope of ridge but couldn't find nest. Saw three cranes in Central Marsh - one performing courtship dance. Watches, then tries to approach, but birds flew.

Back to low polygons by NE corner of ridge. Found phalarope nest, 4 eggs. Pair of western sandpipers in area, but probably not nesting. Continues to slope between C+GS and POW site - zero. Same for polygons below. Last year this was a good area. Returns through polygons and Fresh Lake marsh - barren.

Spent evening in town.

Maclean
1965

Journal

4 July

Barrow, Alaska

Out at noon, leases in general direction of Holmes' Morass. AACS golden plovers are gone. Some pectorals are still there - ca. 1/2 of original group - and those remaining are undoubtedly non-breeders. Several chases seen, but no "booming" and no ground displays. My high hopes for these birds were not borne out.

Walked down "On-the-Beach Ridge"; again failed to locate ras-back nest. Dis find semi-pal and ras-back nests just W. of C + G.S - 4 eggs each. Also found golden plover nest by NE corner of Pitelka's Plot - 4 eggs. Ridge and Morass very quiet. Birds seen were doing more standing around than feeding. Returned by way of Central Marsh. It is full of phalaropes of both sexes. Apparently there will be much non-breeding in phalaropes. Scattered pectorals also appears to be non-breeders.

5 July

Barrow, Alaska

After quick run into town to check on activities for 4th, then took Durham's old clunker of a weasel out to Holmes Morass. Dark, Drizzley

Maclean
1965

Journal

weather - normal for 4th of July celebration. Found golden plover nest near CRREL wanigan. Pair of red-backs + pair of turnstones acting nest-ish in same area. Paralleled slough up to Elson Lagoon - not much but phalaropes. Few shorebirds seen were mostly preening or standing.

Found black brant nest w/ 4 eggs by E end of CRREL transect. Found dessicated remains of slender billed (?) shearwater. Cut across Holmes' Morass towards CRREL wanigan to return. Found area (1) saturated (2) lemming cut (3) covered by lemming fecal ~~pelets~~ ~~pellets~~ ~~pellets~~ turds! Lemming activity there is total, and except for a few phalaropes it is barren.

Returned via Central Marsh road, nursing the lousy weasel. Spent evening in town playing softball. As usual, Village defeated Camp, 13-8.

6 July

Barrow, Alaska

Out with Hamilton towards Micro-Met area. Pectorals in NNCS marsh further reduced in number, completely social in feeding. No evidence of territoriality seen.

Maclean
1965

Journal

Flock of 25 plovers flying actively in erratic patterns in same area. Very close flock formation, even on ground.

Saw both parasitic and long-tailed jaegers over Drum area.

Walked through Central Marsh around South Meadow Lake. Numerous pectorals in marsh - likewise social. One instance of territorial-type aggression in ♂♂ - and this not fully developed.

Checked owl nest - 3 young in nest plus 2 nearby running away. ♂ ad. ca. 125 m. away on mound hooting continuously. ♀ ca. 250m. away, quiet.

Saw ca. 10 oldsquaws (5, 2, 3) around periphery of South Meadow Lake. Looked for loons, but no luck. Returned via Drum area.

Went out to pull in traplines IV A-B in evening. Apparently kids from town has been out playing games; 14 traps at one station, many others set off. No lemmings captures.

Could not pass up beautiful evening, so walked up Voth Creek. Cutting bad, as many other places, is total! Saw many Phalaropes, regular (social) pectorals, occasional res hack. Flock of

Maclean
1965

Journal

23 (±2) Dowitchers feeding in creek. Saw 3 Northern Phalaropes on way back to weasel. Ca. 100 + gulls (glaucous) in Voth area. Not much else of note.

Heard good pectoral hoot along Voth creek as well as several rep-back trills.

7 July

Barrow, Alaska

Magnificent, warm day. Played soccer with Bill Djunsjek during lunch, and ended up out cold from shot in the face. Blocked the shot tho'.

After moderate recovery period headed out towards Voth Creek w/ P. Tetka for to slay some peeps. Mosquitoes are suddenly out in force – worse I have ever seen at Barrow. Uncomfortable, with no off.

Flock of Dowitchers feeding in creek, plus many phalaropes in complete assortment of plumages. Watched pectorals and few semi-pals along creek, then went 'inland' a bit to be sure I wasn't biasing data by limiting observations to creek area. Few birds seen supported those along creek. Returned and collected 3 pectorals for stomachs. Observed others before being forced to return from lack of blood.

Maclean
1965

Journal

8 July

Barrow, Alaska

Pitelka departure day. too bad; I enjoyed his visit this time. Spent afternoon in lab cleaning up last year's trapline shorebird kill. Enables me to reestablish identification of shorebird young - will help when birds start coming out. Preserved all stomachs and entered record of kill. Briefly discussed remainder of season, but not enough time for complete conference.

Went in to plane with Pitelka and slipped out Ray Stensell's suitcase as part of his baggage. Made it without any excess baggage charge. Returned to camp late and grabbed some chow, then wrote notes and read before packing out.

9 July

Barrow, Alaska

Met Mr. + Mrs. G. Dudley Ross - big time bird watchers from Penna. (claim to be 2nd in nation in North American spp. seen), and friends of Dick Holmes'. Took them to lunch, then out to the tundra in miserable weather. They were primarily interested in spectacled and Stellar's Eiders. took care of Stellar's with no problem, but no luck on Spec's. Went out to Voth Area - snowbirds still there

Maclean
1965

Journal

but very restless - appear to be near departure. Flock of pectorals, mostly ♂♂ but significant number of ♀♀, also restless. Found rough back nest w/ 3 eggs, phalarope nest w/ 4, jaeger nest w/ 2. Continues on our towards Footprint Lake - weather getting worse. Raining too hard to do much good, so gave up and came in. Drove Ross' into town and slowed them bluffs South of town as possible site to watch bear for alcids.

Rain persists into evening, but undaunted, into Voth Area to check nests. No hatchlings, 1 4 egg semi-pal nest abandoned (parents possibly done in by some of younger village hunters).

10 July

Barrow, Alaska

An afternoon of administrative duties left time but for brief jaunt, not too productive at that, into S. barrel area - AACS.

Ball game in village - almost won this one. Lost 10-8 in last inning.

11 July

Barrow, Alaska

Up early, for a Sunday and headed inland towards Utqiavik. A feeling of relief and exhilarance overwhelms me as soon as we get away from the

Maclean
1965

Journal

trash and garbage of the immediate Barrow area. The difference in psychological climate is tremendous!

Drove across Footprint Lake, then past South end of Skwavik and eventually stopped by N. end of Holmes plot. Owl density here is about like camp area. Found two nests with young. Photographed one nest. Hard to evaluate jaeger density, since they are everywhere spotty. Appears to be less than camp area. Red-backs appear abundant on plot, pectorals there anyway, none others seen. Saw arctic loon nest w/ 2 eggs. Was greatly impressed by lack of Longspurs there. Futzed around plot, looking for place for waniigan (always thinking ahead!). Decided upon raised ground off S. end of plot, if possible. Sure would be nice.

Headed over for site of old sabine gull colony. Saw birds flying around, but could not locate colony. Believe it has moved, although I could have been in wrong spot. Continued toward S. end of lake - not too much. Found Steller's Eider nest, and photographed it. Saw 3 swans just SW of Footprint Lake on

Maclean
1965

Journal

way home - let us get to above 150 m. before flying.

Was impressed by lack of Arctic Terns - possibly due to ice cover on lakes. Throughout, except for ca. 15-30m. moat around perimeter, is completely ice-covered. Few loons on moat, but otherwise nothing around. Also saw fewer sabines, probably because colony was not located.

On way in observed large ice pile-up on beach. In one place blocks of ice 2-3 ft. thick and to 10 ft. dia. piles ca. 25 feet high. Major pile-up extended ca. 200 m. by South Salt Lagoon. Other lesser piles along beach. Biggest pile extends onto beach about 50 feet - tremendous pressure required to move that weight of ice around. Open water about 100 m. out - 4 squaws, few Steller's Eider ♂♂.

12 July

Barrow, Alaska

Waited for visitor until 2:15, then gave up and went out to set lines V + VI and VII + VIII. VII + VIII, in central marsh, are very wet - sat. to standing water over entire length of lines - and devoid of sign. Central Marsh is now empty of birds - the change seems remarkable! Lemming sign on V + VI is better - few live animals seen. Not too much more in bird life.

Macleod
1965

Journal

traplines took entire afternoon.

Went out to Voth area in evening to check nests. Found all eggs in nests to and including Cake-eater. As cake-eater watch bird giving alarm call, then gave up and shifted to red-back. What-ho! a nest, with..... 3 chicks and 1 pipped egg. That most joyous day of all summers has arrived. Checked another red-back nest on the way in, and found that it, too, is hatching. Once again, the redbacks reassert their position as early nesters.

Left Hamilton and DeBenedictis at ice pile-up to watch for Aleios + Eiors, and walked in to write notes.

13 July

<u>Barrow</u>, <u>Alaska</u>

Out to the tundra with F. W. Prescott — claims acquaintance with Pitelka + connection with Ecological Society of America, although not a professional type. Not a bad of' coot. Most lousy weather - too bad. Took movies of Hamilton being dive bombed by jaegers, then eggs, lemmings, and snowy-owl chicks. Continues on to Footprint Lake and collected few pre-migratory pectorals. Searches area W. of Footprint (far-Southerly Voth area, or upper, upper Voth) —

Maclean
1965

Journal

found it surprisingly empty. Saw few phalaropes, took one (Hamilton joined the ranks of the slayers) plus 1 re-back. Finally wended our weary way homewards.

Spent the evening working on specimens + stomachs of today plus Utqiavik trip.

14 July

Barrow, Alaska

Sometimes Brewer can get a guy mad. Asked me to spend hour or so just after lunch with Mr. Kenneth Doutt, Carnegie Museum. Ok, say I. So Brewer returns from lunch with Doutt and his wife at 2:30! By the time the tour was accomplished it was too late to bother going out, so helped arrange the library and transcribed feeding observations.

Told Hamilton to take the evening off and went out to run his traplines. VII + VIII devoid of birds + mice. V + VI has 3 mice, 3 birds. Big evening, no?! Clear, but cold (below freezing) with wind blowing. Walked around Marsh a bit - could not find red-backs previously localized around CERREL wanigan - possibly hatched out. Turnstones and

Maclean
1965

Journal

Golden Plovers still there. Flock of 8 plovers in assortment of plumages flying around S. edge of Marsh. Not much feeding seen, for sure!

15 July — Barrow, Alaska

A day given over entirely to administration. North Star (DEW line VIP) party plus Barrow Utilities dedication. Spent most of day trying to help Sam Taalak survive it. He made it, barely!

16 July — Barrow, Alaska

Spent afternoon mopping up from V.I.P. visit, then writing notes. Sometimes I hate field notes! After dinner went out through drum area to Micro-Met and back. Quiet, very quiet. Few birds at nests, no real feeding.

17 July — Barrow, Alaska

Out with R.B.H. to Micro-Met and N. Meadow Lake and return. Spent time settling in incubating semi-pal from two feet away and b.s.'ing. Birds joined right in the conversation with frequent chirrrs. Saw few pectorals, es. back in Micro-met marsh, more pectorals in Central Marsh. Old squaws on N. Meadow Lake.

Spent evening in town for ball

Maclean
1965

Journal

gone and.....

18 July — Barrow, Alaska

Went out to duck camp early to see what passes by. Weather cold, foggy, and getting worse. Visibility went all to pot, making duck hunting and bird watching both difficult and unproductive. Saw few flocks of common & king eiders, several loons, that's all.

Came back in rain, which continued all evening. Wrote a few notes, then read for remainder of evening.

19 July — Barrow, Alaska

Rain continued so put in some extra administrative time. Paul + Bob went out late in afternoon and had vessel trouble, leaving us without transportation for evening. No boat — weather continues too rotten for constructive work.

20 July — Barrow, Alaska

Walked out through drum area and caught up with Bob & Paul setting traplines 9 + 10. Helped them, then went out to help set lines 1 + 2. Found Plover nest that has hatched. Only one chick seen. Too bad nest was near

Maclean
1965

Journal

found to give egg out. After setting lines went S of Jackline Point nomma-killing. Got redback and 2 phalaropes. Found 3-egg phalarope nest.

Weather greatly improves, so went out to Duck Camp again. Took boat up to mouth of Wolstenholme Slough and took 12 eiders. Could have got more. Brants were flying at about 1 flock/5 minutes. Common seems to fly out over water more; kings out land — although too few observations to definitely say. All birds killed were kings. Saw many (ca. 20) loons, two murres. Also squaws on water by ice in Clifton Lagoon.

21 July, Barrow, Alaska

Out to Micro-Met area in afternoon. We have reached that time of the season ..... nothing! Tundra is now very green - with no dead grass on top of the living it is very obvious - but no shorebirds enjoying it. Too Bad.

Went into town for ball game in evening, then walked back along beach. Saw several groups of murres, few eiders, glaucous gulls.

Macker
1965

Journal

22 July

Barrow, Alaska

Started out towards Mica Mt, then went along North side of beach ridge and into area NE of C+G.S. Last year this was a good area, especially around hatching time. Not this year. Searched Pow site low polygons with similar results. Finally threw in the towel and came in.

After dinner tried to sit through Lolita, but couldn't hack it. Walked out, then waited for R.B.H. and went out to check lines I & II. Saw some eiders flying over, but not much on the ground. Flock of 12 golden plovers in Hamilton's Enigma – too restless to get close. Flock of ca. 15 smaller birds loosely associated with Plovers – probably semi-pals. Likewise too restless to approach.

Started in, and found track has separated. Managed to nurse it back at 2 mph, picking up two users en route.

23 July

Barrow, Alaska

Mechanics broke the track before reaching the shop! So don't give us any more heat about weasels. No

MacLean
1965

Journal

available, so spent the afternoon in writing field notes and packing box #1 of outbound books, etc.. Guess that commits me to leave.

After dinner walked up to duck camp, then over to N. part of Holmes Morass. Saw non-breeding red-backs. Wow! 1 pr. golden plovers w/ (unseen) young.

24 July

Barrow, Alaska

Miserable weather all afternoon. Stayed in cleaning up and B.S.'ing. Met bird watcher from New York and had interesting discussion. After dinner rode into Browerville in weasel, then walked on in to devote evening to frivolity, etc..

25 July

Barrow, Alaska

Never bothered going to bed — walked into camp with Eugene Brower; changed clothes and grabbed some chow, out to Burrick for weapons, then back into town. Picked up Hames and Frank Matumeak, and finally were bound for the interior about 5:00 A.M.. Warmest, clearest, most brilliant day I have ever seen at Barrow - magnificent!

Maclean
1905

Journal

'cept we didn't bring enough mosquito repellent. Hesso for Hrosvik from village, stopping at owl nests enroute. No hurry - no set plan. Saw ca. 250 glaucous gulls on South part of Footprint lake. Saw flock of black bellied plovers by inlet at N. end of Hrosvik. Captures jaeger with broken wing, and got face cut open handling the beast. Deserves it!

Drove + walked down West side of Hrosvik observing and collecting shorebirds. Saw frequent broods of red-back chicks; 1 brood of phalaropes; several of golden plovers. No other shorebirds w/ young - and no buntings or semi-palms seen all day. Collected 5 pectorals, 1 red-back, 2 golden plovers. Seems: every red-back seen has chicks, and my soft heart won out. Should get enough chicks in traplines.

Red-backs seen with chicks were in low, wet, flat stuff. Few seen without, one acting as if incubating, on higher, well drained tundra.

Rode most of the way on top of

Maclean
1965

Journal

weasel, fighting off mosquitoes. Laughed for half an hour when Frank fell off into a puddle.

Met Bob and Paul right after we stopped for lunch. They followed us for awhile after, but then turned back. Saw 4 spectacles eider w/ 4 chicks about 5 miles after they turned back.

Lines for narrow neck of land on W. side of Sungoudoak. Stopped at Sabine Gull colony of ca. 150 birds. Could find no nests or juveniles, but enough feathers and droppings to indicate birds have been here quite a while. Were in same spot last year. Wonder what's up. Ca. 10 terns mixed in with gulls. Likewise could find no young. Collected ♂ gull - t about 6-7 mm, no b.p..

Continued South, but stopped about half way down Sungoudoak when we were all falling asleep. Dis fell asleep while driving home - pretty hard to do in a weasel. Picked up 2 owls for Brewer on the way home (eph!).

Maclean
1965

Journal

Returned via village to lot of pax, and finally hit the rack about 1:00 A.M..

26 July

Barrow, Alaska

Hell with it; I'm not going to get up! Went out to C+G.S. to change records at 2:00, then returned to work to make up time missed in the morning.

Spent the evening processing birds shot yesterday. All are non-breeding or have finished breeding.

27 July

Barrow, Alaska

Out to C+G.S. for record change, then continues across Wohlsag Slough to bring in some owls to satisfy Brewer. Could only find one clutch of 3 between Wohlsag and Okpik Slough. Took 1. I refuse to steal more than 1 from a clutch. Chases flock of ca. 15 black-bellied plovers without ever getting closer than 150m..

Went back way to East Gasline Ridge, seeing negligable shorebirds. ~~[illegible]~~ Took 1 owl, not too far from flying, that.

Macka
1965

Journal

took 1 from each of the nests south of Gaskin. Enough, Enough!
Arise from a few phalaropes, nothing in the way of shorebirds the whole warn day! Frustrating.

28 July

Barrow, Alaska

Out to C & G.S., then walked down D. Ditelka's Plot in cold, miserable weather. Saw flock of golden plovers feeding in wet tundra near drying ponds. Black-topped ponds become evident part of tundra for first time. Checked these for holes - present in about 1/4 ponds, and not yet in great numbers. Either larvae not there in sig. ans/or numbers yet or surface active adult insects are preferred. Tried a few Holmes surface observations without seeing any surface insects - but day not too good for them.

Saw few flocking non-breeding red-backs, also on Ditelka's Plot.

Evening - clearing up, so went out to Duck Camp. Most people were out. Watched ducks and Murres, then went out hunting at midnight, Stayed until 4:00 A.M. - collected 50 candidates for the stew pot. Joe

Macka
1965

Journal.

Algeat Jr + I got 9 with 3 shots on one flock. Ice was in in lagoon; we hunted from the ice, and could go after a large portion of the cripples across the ice. Saw many murres - one flight of ca. 20 seemed to be flying back and forth. 1 flock of ca. 14 big auks low over the ice. Several black-legged kittiwakes - no flocks.

29 July

Barrow, Alaska

Out to C + G.S., then went down the ridge and helped Hamilton set traplines VII and VIII in Central Marsh. Still very wet there - don't expect much. Did not see any shorebirds there.

Left weasel for Paul and took other one over to North Meadow Lake to check on "spectacled Stellar's eider" reported by Bob. Walked around ponds East of North Meadow Lake without seeing the duck. In fact, without seeing anything but phalaropes. Collected two thereof.

In the evening went trap-checking via Holmes' Marsh. F lock of golden plovers still there. VII + VIII absolutely barren - nothing seen, lost, or trapped.

Naclar
1965

Journal

~~30~~ July One lemming each in V + VI. Saw few rec-backs near lines. Jaegers at end of VI actively defending chick. Drove on to Fertilizer plot, and to the in line VIII a juvenile rec-backed sandpiper. Heard adult giving alarm call beyond 10.0 end of line. Walked around area observing rec-backs - feeding in wet-stuff, inc. black-topped ponds, then came in.

30 July Barrow, Alaska

Rain! Work notes while Paul packed up for departure. After dinner went out to Duck camp, and then birds watching along shore of Elson Lagoon. Alternated between Ducks and shorebirds. Not too very many of either. Flocks of Longspurs very much in evidence. The swallow influx seems very general - not localized. Loose groups of 3 or 4 to 12 spread evenly over tundra.

Tundra is now very green and lush looking. No Eriophorum heads have appeared, possibly as a result of lemmings.

1 August Barrow, Alaska

Went out to C + G.S. with Hamilton to change records, then went on to Fertilizer Plot to bring in lines XIII and XIV. No beasts there. Weather has been getting worse. Looked around the area,

Maclean
1965

Journal

then drove back for weasel left by R.B.H. this A.M.. Decided to go to the show for a change this evening. How 'bout that?!

2 August — Barrow, Alaska

Spent the day packing and waiting for a plane to Cape Thompson. It never came. Typical arctic nobody knows nuthin' operation. Meanwhile rain started and washed out the evening. Let up about 9:00, so went out and walked the beach with R.B.H. looking at ice, alcids, and generally contemplating. Not much variety, but plenty of each!

3 August — Barrow, Alaska

Plane left for Thompson this afternoon, with Bob but without the kids. Plans for return are too vague; I don't want to get stuck down there. Hopefully I'll go down for an R.O.N. when we go after Bob.

Spent afternoon in the office to clean up the piles of paper accumulating on my desk.

After dinner drove out and parked by micro-met and started walking. Beautiful cool, partially cloudy evening. Walked toward Voth Slough, then turned toward Gasline Ridge. Saw

Maclean
1965

Journal

first flying immature owl, this from our earliest nest. Birds have moved over to high polygon area W. of N. Meadow Lake. Both adults and two non-flying immatures also seen in area. Non-fliers were ca. 50 m. apart, and 100 m. from spot where flier was first seen.

Continued on, paralleling gas-line. Saw very little. Two red backs by W. end of gas-line ridge, ca. 150 m. apart. No evidence of chicks nearby or association between birds. Probably non or unsuccessful breeders.

Saw small (6-8 birds) very active group of smallish peeps in high polygons by S. Meadow Lake — could not get close enough to identify. And that was the extent of the shorebird activity.

Returned around mid-night. At ACCS saw 3 juvenile red-foxes playing on road. Approached to 50 ft. before they ran into drum area. Followed one for 10 minutes. Fox would run ca. 100 m., then stop to look back for 10-15 sec, then run some more. Continued this until out of sight.

S. MacLean

1964 - 1966

1965: feeding observation tables

SHOREBIRD FEEDING OBSERVATION

SAMPLE: 9 JN / BR / a / 001 / 8P / f / sat / 1A/ 5/1 / 0
15 pk, 2 ser j 10-12 ea

Date Loc Sp No. Time Top Moist Veg H:L/D Cut

Species:
a - Calidris alpina
b - C. bairdii
f - C. fuscicollis
p - C. pusillus
m - C. melanotos
T - Tryngites subruficollis
Pd - Pluvialis dominica
A - Arenaria interpres
Pf - Phalaropus fulicarius

Number: 001, 002, 003 etc. without regard to different species, places, or dates

Time: In hourly intervals. 8 = time betw. 8 and 9. P, p.m.
A, a.m.

Topography:
f - flat or gentle slope
lp - low polygon
rp - raised polygon
pt - polygon trough
pe - pond edge
d - disturbed ground, as weasel tracks, etc.
s - stream bank
m - mound
ch - channel

Moisture:
pw - pond water
sw - standing water (flooded tundra)
sat - saturated
w - wet
d - dry

Vegetation:
~~0 - bare ground~~
~~+ - moss and lichen only~~
1 - less than 25% graminiforms
2 - 25-50% gram's
3 - 50-75% "
4 - 75-100% "
A - moss and/or lichen understory
B - bare ground or 'muck' understory

Height, living/dead: 0 (prostrate) or 1, 2, etc. (inch intervals)

Cuttings: 0, 1, 2, or 3 (none, some, moderate, heavy)

Style: peck (pe), jab (j) or probe (pr)

Maximum observations from one individual:
30-sec. unit observation x 5 without flying
additional 30x5 each time bird flies, up to 5 sites

Maclean
1965

	sp.	obs. #	time	top	moist	veg g/f	under	Lem.	ht - d/l
11 June	b	001	4P	rp(d)	ω	2/0	Uml	Co	1/0
				surface pecking					
				f	s.w.	4/0	Um	C3	1/0
	a	002	4P	lp	sat	3/0	Um		1/0
				lp	ω	3/0	Um	C2	1/0
	a	003	4P	lp	d	2/?	Uml	C3	1/0
				surface peck - rapid.					
12 June	a	004	1P	f	ω	2/?	Uml	C2	1/0
				surface					
	a	005	2P	f	ω	3/?	Uml	C2	1/0
				surface					
	P.d	006	2P	f	ω	3/?	Uml	C3	1/0
				4 surface peck (30 sec.)					
	a	007	2P	lp	ω	3/?	Uml	C2	1/0
				surface - ser of 2-4. ca. 12 ser/30 sec.					
	Pd	008	2P	lp	ω	2/?	ml	C1	1/0
				surface					
	a ♂	009	2P	f	sat	3/?	ml	C3	1/0
				probe through litter - 12 ser/30 sec.					
	a	010	2P	f	sat	3/?	ml	C1	1/0
				probe in loose mossy litt - 9/30 sec.					
	a	011	2P	f	ω	2/?	ml	C1	1/0
				ser of 2-10 jabs - 12 ser/30 sec. occ. peck.					
	a	012	2P	f	ω	4/?	ml	C3	1/0
				ser of rapid jabs - 12/30 sec, then continual					
	Pd	013	2P	f (d)	ω	2/?	m	Co	0/0
				jab through loose turf.					

Maclean
1965

	sp.	obs. #	time	top	moist	veg g/f	unar	lem	hr d/l
(12 June)	a	014	2P	f	sat	4/?	m	C_3	1/0
				8 ser of 3-6 jabs					
	a	015	3P	f	sat	4/0	m	C_3	1/0
	a	016	3P	f	sat	4/0	m	C_3	1/0
				12 ser of 3-5 jabs, w/ exp. pack.					
				1 1/4 min continual deep jabs in 1 spot.					
	a	017	3p	f	sat	4/0	m	C_3	1/0
				ser of 3-12 jabs - 9/30 sec					
				f	sat	4/0	m	C_3	1/0
				12 ser 3-12 jabs					
				f	sat	4/0	m	C_3	1/0
				14 ser 3-12 jabs					
	a	018	3P	f	sat	4/0	m	C_3	1/0
				ser of 3-10 jabs into litter - essentially contin.					
	a	019	3P	f	sat	4/0	m	C_3	1/0
				lp	sat	4/0	m	C_3	1/0
				jab in ser of 3-6, then cont. jab in place					
	♀ a	020	4P	f	sat	4/0	m	C_2	1/0
				ser. of jab - 10/30 sec.					
				f	sat	4/0	m	C_2	1/0
				16 ser jab/30 sec.					
				f	sat	4/0	m	C_2	1/0
				17 ser jab/30 sec.					
	a	021	4P	f	sat	4/0	m	C_2	1/0
				jab in ser of 3-12 - 10/30 sec.					
				f	sat	4/0	m	C_2	1/0
				12 ser jab/30 sec.					

Maclean
1965

	sp	obs #	time	top	moist	veg g/f	Umor	lem	ht d/l
(12 June)	b	022	4P	lp	w	2/?	ml	C_2	1/0
				lp	sat	2/?	ml	C_0	1/0
				rp	w	2/?	ml	C_0	1/0
				rp	w	1/?	ml	C_0	1/0
				very rapid shallow jobs.					
	P. d.	023	4P	rp	w	2/?	ml	C_0	1/0
	♂ m.	024	4P	lp	s.w.	4/0	m	C_3	1/0
13 June	p	025	11 A	ch	w	1/?	ml		1/0
	p	026	11 A	lp	w	3/?	ml	C_0	1/0
	p			lp	w	3/?	ml	C_0	1/0
				rp	w	1/?	ml	C_0	1/0
	♂ m	026	12P	f	w	4/0	m	C_2	1/0
	♀ P.d.	027	12P	f	w	4/0	m	C_2	1/0
				lp	w	1/?	ml	C_0	1/0
				lp	w	3/?	ml	C_2	1/0
	♂ P.d.			lp	d	1/?	ml	C_0	0/0
	a	028	1P	f	sw	2/?	m	C_0	1/0
	a	029	1P	lp	w	3/?	m	C_2	1/0
	a	030	1P	f	sat	4/0	m	C_3	1/0
	♂ a	031	2P	f	w	4/0	m	C_3	1/0
				f	w	3/0	m	C_3	1/0
	a	032	2P	lp	w	3/?	m	C_3	1/0
	a	033	2P	lp	w	2/?	ml		1/0
	♂ a	035	3P	f	w	3/?	ml	C_2	1/0
	a	036	3P	lp	w	3/?	ml	C_2	1/0
	a	037	3P	lp	sat	3/?	ml	C_1	1/0
	a	038	3P	lp	w	2/?	ml	C_0	1/0

Maclean
1965

	sp.	obs #	time	top.	moist	veg g/f	Unoc	lem.	ht d/l
(13 June)	a	038	3P	lp	w	2/?	ml	C_0	?/0
				lp	sw	3/?	m	C_0	?/0
	a	039	3P	lp	w	3/?			?/0
	P. f.	040	3P	lp	pond-sw	2/?	m	C_0	?/0
				lp	pond-sw	2/?	m	C_0	?/0
	a	041	3P	f	sat	3/?	m	C_0	?/0
	P. f.	042	3P	lp	pond-sw	3/?	m	C_0	?/0
	a	043	4P	lp	w	3/?	m	C_0	?/0
	P. f.	042-b	4P	lp	pond	2/?	m	C_0	?/0
	P. d.		4p	rp	dry	1/?	ml	C_0	?/0
	a	044	4P	f.	w	3/?	ml	C_2	?/0
	a	045	5P	ch	sat	2/?	ml	C_2	?/0
	f	046	5P	lp	sat	3/?	ml	C_0	?/0
				rapid, near continuous jabs					
	b	047	5P	m	dry	+/?	ml+	—	—
	f	048	5P	lp	w	1/?	ml	—	—/0
14 June	begin 30 second observation period								
	a	049	3P	f	w	4/0	ml	C_3	?/0
	a	050	3P	f	sat	3/0	m	C_3	?/0
				28 ser jab. billing 4/s					
				f	sat	3/0	m	C_3	?/0
				23 ser jab.					
				f	sat	3/0	m	C_3	?/0
				17 ser jab					
				f	sat	3/0	m	C_3	?/0
				20 ser jab					

Maclean
1965

	sp.	obs. #	time	top	moist	veg g/f	unser	hem	ht d/l
(14 June)				f	sat	3/0	m	C_3	?/0
					18 ser jab. Bill holes ½" deep.				
	a	051	3P	f	sat	3/0	m	C_3	?/0
					12 ser jab.				
				f	sat	3/0	m	C_3	?/0
					13 ser jab				
				f	sat	3/0	m	C_3	?/0
					11 ser jab				
				f	sat	3/0	m	C_3	?/0
					9 ser jab				
				f	sat	3/0	m	C_3	?/0
					12 ser jab.	bill in	grnd		3/5
	a	052	3P	f	w	4/0	m	C_3	?/0
					11 ser jab.				
	P.d.	053	3P	f	sat	4/?	m	C_3	?/0
					3 packs				
				f	w	3/?	m	C_3	?/0
					5 packs				
				f	w	3/?	m	C_3	?/0
					5 packs				
				f	w	3/?	m	C_3	?/0
					5 packs				
				f	w	3/?	m	C_3	?/0
					6 packs				
	a	054	3P	f	w	3/?	m	C_3	?/0
					14 ser jab				

Maclean
1965

	sp	obs #	time	top	moist	veg g/f	mor	Lem	he d/l
(14 June)	alba	055	3P	m	d	2/?	ml	C_2	?/0
				10 pk. Plover like, spec-up.					
				m	d	2/?	ml	C_2	?/0
				14 pk. moves ca. 30 meters.					
	Pd	056	4P	f	w	4/0	m	C_2	?/0
				3 pk (1-3/sec.)					
				f	w	4/0	m	C_2	?/0
				2 pk					
				f	w	4/0	m	C_2	?/0
				2 pk.					
	alba	057	4P	ch.	w	3/?	m	C_1	?/0
				7 pk					
				ch	w	3/?	m	C_1	?/0
				12 pk.					
				ch	w	3/?	m	C_1	?/0
				3 pk.					
	alba	058	4P	lp	w	4/0	m	C_3	?/0
				13 pk, 2 shal. jab.					
				lp	d	+	—	—	—
				7 pk.					
	a	059	4P	f	w	4/0	m	C_2	?/0
				18 sec jab, 1 pk.					
	♂ m	060	4P	f	sw	4/0	m	C_3	?/0
				ch	w	4/0	m	C_2	?/0
				ca. 18 jabs - more distinct than a.					
	♀ m	061	4P	ch	w	3/0	m	C_2	?/0
				19 short, distinct sec jabs.					

Maclean
1965

	sp.	obs.#	time	top.	moist	veg-s/f	Unser	Lemm.	ht-d/l
(14 June)	♂ m	062	4P	ch	w	3/0	m	C_2	?/0
					17 sec. jab - distinct				
				m	w	3/0	m	C_2	?/0
					14 sec jab				
				ch	w	4/0	m	C_2	?/0
					16 short sec jab - ca. 3/sec.				
	T.S.	063	4P	m	d	0/?	—	—	—
	♂ m	064	4P	f	sat	4/0	m	C_2	?/0
					10 sec jab.				
				ch	sat	4/0	m	C_2	?/0
					11 sec jab.				
				ch.	sat	4/0	m	C_2	?/0
					10 sec. jab.				
	♀ m	065	4P	f	sat	4/0	m	C_1	?/0
					15 sec jab				
				f	sat	4/0	m	C_1	?/0
					16 sec jab.				
				f	sat	4/0	m	C_1	?/0
16 June	♂ a	066	8P	f	sat	4/0	m	C_3	0/0
					continual jabbing 20 sec, 5, 5+...				
	♀ a	067	8P	ch	sw	4/0	m	C_3	1/0
					continual jabbing - ca. 45 times				
	f	068	8P	f	sat	3/0	m	C_2	0/0
	a	069	9P	f	sw	4/0	m	C_2	0/0
					continual jabbing				
				f	sw	4/0	m	C_2	0/0
					cont. jab.				

Maclean
1965

	sp.	obs.#	time	top	moist	veg g/f	under	lem	ht d/l
(16 June)	a	070	9P	f	w	3/0	m	C_2	0/0
				5 ser. jab					
	A.i.	071	9P	lp	sat	4/0	m	C_2	0/0
				peck into mossy litter, tossing litter aside. 45 leaf movements.					
	♂ a	072	9P	f	sat	4/0	m	C_1	1/0
				15 ser 3-6 jabs.					
	a	073	9P	lp	sw	3/0	m	C_1	1/0
	Ai	074	9P	lp	d	+	ml	—	—
				peck singly					
	f	075	9P	f	sat	3/0	m	C_0	2/0
				15 short ser jab at base of grass bunch.					
				f	sat	3/0	m	C_0	2/0
				14 short ser jab. + 1 pk					
				f	sat	3/0	m	C_0	2/0
				13 ser jab + 1 pk					
				f	sat	3/0	m	C_0	2/0
				11 ser jab + 4 pk.					
				f	sat	3/0	m	C_0	2/0
				12 very shallow jab + 5 pk.					
	Ai	076	9P	lp	sw	3/0	m	C_0	2/0
				steady peck + toss - 35/30 ser.					
				lp	sat	3/0	m	C_0	1/0
				lp	sw	2/0	m	C_0	1/0
				messy patch in puddle					

Jackson
1965

	sp	obs #	time	top	moist	veg g/f	under	lem	lt d/l
				lp(d)	sat	3/0	ml	C_0	1/0
(16 June)					peck + toss ca. 45 [redacted].				
	a	077	9P	pond	p.w.	2/0	m	C_0	2/0
					11± distinct ser jab.				
	p	078	9P	lp	sw	3/0	m	C_0	1/0
	Pd	079	9P	lp	w	4/0	m	C_1	1/0
					2 ser of 2 pks.				
				lp	w	4/0	m	C_1	2/0
					3 pks.				
	a	080	10P	pond	pw	1/0	m	C_0	1/0
18 June									
	Pd	081	2P	lp(d)	d	3/0	ml	C_2	0/0
					12 peck				
	♀ a	082	2P	f	w	2/0	ml	C_2	0/0
					9 jab (1-4) / 15 sec.				
				f	w	3/0	ml	C_2	0/0
					12 jabs (1-4) exploratory				
	a	083	2P	f	w	2/0	ml	C_2	0/0
				lp	w	3/0	ml	C_1	0/0
					15 jabs (3-8)				
	a	084	2P	f	w	4/0	m	C_3	0/0
					13 ser jab + exp. pk.				
				f	w	4/0	m	C_3	0/0
					14 ser jab + 2 ser probe				
				f	w	4/0	m	C_3	0/0
					13 ser jab - some deep				
	Pd	085	3P	m	d	1/0	ml	C_0	0/0
					6 peck. at least 1 success.				

Maclean
1965

	sp	obs#	time	top	moist	veg g/f	under	lem	ht d/l
(18 June)	Pd	085(cont)	3P	m	w	2/0	ml	C_2	0/0
					4 pk (1 × 2)				
	♀a	086	3P	m	w	3/0	ml	C_2	0/0
					11 jab - some singular, exp.				
				f	sat	4/0	m	C_3	0/0
					12 jab + 1 probe ser.				
				f	sat	4/0	m	C_3	0/0
					10 jab.				
	♂a	087	3P	f	sw	4/0	m	C_3	0/0
					13 ser jab + 1 ser probe. Near continuous				
				f	sw	4/0	m	C_3	0/0
					13 ser jab - very rapid. Flew + displayed				
				f	w	4/0	m	C_1	2/0
					10 ser jab - rapid.				
				f	sat	4/0	ml	C_2	1/0
					15 ser jab + 2 ser probe				
	Pd	088	4P	f	w	4/0	m	C_3	0/0
					6 pk (?)				
	♂a	089	4P	m	w	2/0	ml	C_0	0/0
					12 ser jab				
				f	sat	4/0	m	C_3	0/0
					6 ser probe (?) / 15 ser.				
	Ai	090	4P	f	w	3/0	ml	C_2	0/0
	a	091	4P	f	w	4/0	m	C_1	1/0
				f	w	4/0	ml	C_2	1/0
					4 ser jab - 4 ser probe				

Maclean
1965

	sp	obs #	time	top	moist	veg g/f	under	lem	hr d/l
(18 June)	♂ a	092	4P	lp	w	3/0	ml	C_2	0/0
					6 sec jab - 5 sec probe				
	♀ a	093	4P	f	w	3/0	ml	C_2	1/0
					16 jab sec.				
				f	sw	4/0	m	C_3	1/0
					9 jab / 15 sec.				
	b	094	4P	lp	w	1/0	ml	C_0	-/-
					peck, + shal. jab				
				rp	w	+/0	ml	—	—
				rp	w	3/0	b	C_0	2/0
					17 shal. jab (1-3)				
				rp	w	1/0	b	C_0	1/0
					14 pk (exp) + 1 jab / 15 sec				
				rp	w	+	—	—	—
					21 pk				
				rp	w	2/0	ml	C_2	0/0
					12 sec jab, 6 pk				
				rp	w	3/0	ml	C_3	0/0
					4 jab, 10 probe.				
				rp	w	1/0	ml	C_0	0/0
					15 jab (2-6)				
19 June	♀ m	095	2P	pol	sw	4/0	m	C_3	0/0
					9 jab - sing.				
				pol	sat	4/0	m	C_3	0/0
					10 jab - set to 6.				
					collected				

Maclean
1965

	sp.	obs #	time	top	moist	veg g/f	under	lem	hr d/l
(19 June)	♀ a	096	2P	po	pw	4/0	m	C_3	0/0
					continual jab (12 ser)				
				po	pw	4/0	m	C_3	0/0
					9 ser (cont) jab				
				po	pw	4/0	m	C_3	0/0
					11 ser jab				
					collected.	[pw 1" deep]			
	♂ a	097	2P	po	pw	4/0	m	C_3	0/0
					21 ser jab (3-6)				
				po	pw	4/0	m	C_3	0/0
					13 ser jab (4-8)				
				po	pw	4/0	m	C_3	0/0
					19 ser jab - deeper				
					collected.	(#2)			
	p	098	2P	pos	sat	4/0	m	C_3	0/0
					10 pk.				
				pos	sat	4/0	m	C_3	0/0
					6 pk				
				pos	sat	4/0	m	C_3	0/0
					1 ser jab + 9 pk.				
				pos	sat	4/0	m	C_3	0/0
					9 pk.				
					collected.				
	p	099	3P	f	w	4/0	m	C_2	1/0
					9 pk				
				f	d	4/0	ml	C_3	1/0
					9 pk				

Maclean
1965

	sp	obs #	time	top	mobt	veg g/f	under	lem	tr d/l
(19 June)	♀a	100	3P	f	w	3/0	ml	C_1	2/0
					15 jab (2-5)				
				f	sat	2/0	m	C_0	2/1
					10 ser jab				
				f	w	3/0	ml	C_0	2/0
					11 ser jab, 3 ser probe. probe success				
				f	d	3/0	ml	C_0	2/0
					14 ser jab				
	p	101	3P	pos	sat	2/0	m	C_0	2/1
	♀a	102	3P	f	w	3/0	m	C_3	0/0
					12 jab (3-6)				
				po	sw	4/0	m	C_2	1/0
					collected (#3)				
	♂a	103	3P	lp	w	2/0	ml	C_3	0/0
					5 ser jab				
				lp	sat	3/0	ml	C_3	0/0
					12 ser jab				
				lp	w	1/0	ml	C_0	0/0
	♂m	104	4P	lp	sw	4/0	m	C_2	0/0
	a	105	4P	f	w	3/0	ml	C_0	2/0
					12 ser jab				
				f	w	3/0	ml	C_0	2/0
					6 ser jab/15 sec				
	♀f	106	4P	f	w	3/0	m	C_2	0/0
					9 ser rapid jab (4-8)				
				lp	w	3/0	m	C_1	1/0
					11 ser rapid jab.				

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1965

	sp.	obs. #	time	top	moist	veg %	under	lem	lit. d/l
(19 June)	a	107	4P	po	pw	4/0	m	C_3	0/0
					collected		(#4)		
	f	106 (cont)	4P	lp	sat	3/0	m	C_0	0/0
					6 ser jab - 5 ser probe				
					collected				
	♂ f	108	4P	lp	sat	3/0	m	C_3	0/0
					11 ser exp. jab				
				lp	sat	3/0	m	C_3	0/0
					8 ser jab.				
					collected				
20 June	Pd	109	12P	lp	w	2/0	ml	gr	0/0
					8 pk				
				lp	w	2/0	ml	gr	0/0
					7 (pk + jab)				
				lp	w	2/0	ml	gr	0/0
					9 jab into grupping.				
	b	110	12P	rp	w	3/0	ml	C_1	0/0
				lp	w	2/0	ml	C_0	0/0
	♀ a	111	12P	lp	w	3/0	ml	C_2	0/0
					11 ser jab (2-b)				
				lp	w	2/0	ml	C_1	0/0
					14 ser jab.				
				lp	w	4/0	ml	C_1	0/0
					13 ser jab				
				lp	w	2/0	ml	C_0	0/0
					14 ser jab				

Maclean
1965

	sp	obs#	time	top	moist	veg %	under	lem	lit %
(20 June)				lp	w	2/0	ml	C_0	0/0
					9 ser jab				
	a	112	2P	lp	d	4/0	ml	C_1	1/0
					11 lieserly jabs				
				po	sw	3/0	ml	C_2	0/0
					9 jabs (2-5)				
	a	113	2P	lp	sat	2/0	ml	gr	0/0
	a	114	2P	lp	w	2/0	ml	gr	0/0
					11 ser jab				
	♂m	115	2P	po	pw — 3 inches deep				
					13 probe into suspended litter.				
	♂Pd	116	2P	f	sw	4/0	m	C_1	2/0
					4 pk				
				f	sw	4/0	m	C_1	2/0
					4 pk.				
	f	117	2P	po	sw	4/0	m	C_1	1/0
21 June	♀b	118	7P	rp	d	+			
					ca. 15 probe w/ expl. peak				
				rp	d	+			
				rp	d	+			
				lp	w	4/0	m	C_0	1/0
					14 probe				
				lp	w	4/0	m	C_0	1/0
					14 probe				
				m	w	4/0	m	C_0	2/0
					13 probe				

Maclean
1965

	sp	obs.#	time	top	moist	veg g/f	under	lem	ht d/l
(21 June)	♀b (cont.)			lp	w	3/0	m	Co	1/0
					13 probe				
	♀	119	8P	f	sw	4/0	m	C3	1/0
					15 peck				
				f	sw	4/0	m	C3	1/0
					10 peck				
	♂ m	120	8P	f	sw	4/0	m	C2	2/0
				f	sw	4/0	m	C2	2/0
	♀ m	121	8P	f	sw	4/0	m	C1	2/0
	♀	122	9P	f	sw	4/0	m	C3	1/0
					10 pk				
				f	sw	4/0	m	C3	1/0
					10 pk				
	Pd	123	9P	f	sw	4/0	m	gr	0/0
					2 probe				
				f	sw	4/0	m	gr	0/0
					5 probe				
	♂ m	124	9P	po	pw	(3" deep)			
					probe into suspended litter				
	♀	125	9P	po	sw	3/0	ml	C3	1/0
					6 pk - hunting visually				
				po	sw	3/0	ml	C3	1/0
					9 pk				
				po	sw	3/0	ml	C3	1/0
					6 pk				
	♀	126	9P	po	sw	4/0	m	gr	0/0
					16 pk.				

Maclean
1965

	sp	obs#	time	top	moist	veg g/f	under	lem	ht d/l
(21 June)	♀	126 (cont)		po	psw	4/0	m	gr	0/0
					13 pk.				
	♂ m	127	10P	po	sw	4/0	m	C3	1/0
					9 probe, 4 jab				
				po	sw	4/0	m	C3	1/0
					5 probe, 8 jab (7				
	♀	128	10P	po	sw	4/0	m	C3	1/0
					5 pk				
				po	sw	4/0	m	C3	1/0
					7 pk - visual				
				po	sw	4/0	m	C3	1/0
					7 pk				
				po	sw	4/0	m	C3	1/0
					10 pk				
	♂ m	129	10P	po	sw	4/0	m	C3	2/0
	♀	128 (cont)	10P	po	sw	4/0	m	C3	1/0
					9 pk				
	♀ Pd	130	10P	f	sat	4/0	m	gr	2/0
					4 probe into loose gr.				
				f	sat	4/0	m	gr	2/0
					4 probe into loose gr.				
22 June	Ai	131	3P	lp	w	+			
	Pf	132	3P	po	pw	(6" deep)			
					single, visual jabs into susp. litter				
	Ai	133	3P	lp	w	1/0	muck	C0	0/0
				lp	d	+			

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1965

	sp	obs #	time	top	moist	veg 9/f	under	bem	lr d/l
(22 June)	a	134	3P	po	sw	3/0	m	C_2	2/0
					10 sec jab, 2 sec probe				
				po	sw	3/0	m	C_2	2/0
					4 sec probe / 15 sec.				
	a	135	3P	po	sw	3/0	m	C_2	1/0
	Pf	136	3P	po	pw				
					clear water-- no visible litter				
	♂a	137	4P	lp	sdt	3/0	ml	C_3	0/0
					11 sec jab				
	Pf	138	4P	po	pw	(6" deep)			
					4 pk - rotate - litter free				
	Pf	139	4P	po	pw	(4' deep)			
					4 pk - rotate				
	Pd	140	4P	f	sdt	3/0	ml	C_3	1/0
					4 jab (1-3)				
				f	sdt	3/0	ml	C_3	1/0
					2 pk - 2 jab				
				f	sdt	3/0	ml	C_3	1/0
					4 pk				
				f	sdt	3/0	ml	C_3	1/0
					1 pk, 3 jab				
				f	sdt	3/0	ml	C_3	1/0
					1 pk, 2 jab				
	a	141	4P	lp	sdt	3/0	m	C_2	3/0
	Pf	142	4P	po	pw	(6") - rotate			
	Pf	143	4P	f	sw	3/0	m	C_2	2/0
					11 jab into susp litter / 15 sec.				

Maclean
1965

	sp	obs #	time	top	moist	veg-S/F	moss	lam	lit d/l
(22 June)	Pf	143 (cont)		f	sw	3/0	m	C_2	2/0
					13 jab into susp litter				
	♂m	144	4P	po	sw	3/0	m	C_2	0/0
					10 sec jab (3-7) into susp. litter				
	Pf	145	4P	f	sw	4/0	m	C_2	2/0
	Pf	146	4P	po	pw	-rotate			
	♂m	147	4P	po	sw	4/0	m	C_2	1/0
	Pf	148	9P	po	pw				
					21 pack, "turnstoning" litter				
				po	pw				
					24 pack - some - flicking litter.				
23 June	a	149	2P	lp	sat	3/0	m	C_0	2/1
					14 sec jab				
	p	150	2P	lp	sat	3/0	m	C_1	0/0
	fm	151	3P	f	sat	3/0	m	C_1	2/1
					9 jab (2-6)				
				f	w	4/0	m	C_1	2/1
					7 jab collected				
	a	152	3P	f	sat	4/0	m	C_2	1/0
					7 jab + probe				
				f	sat	4/0	m	C_2	1/0
					9 jab (+probe?)				
				f	sat	4/0	m	C_2	1/0
					14 jab + probe				
				f	sat	4/0	m	C_2	1/0
					6 jab, 2 probe				

Maclean
1965

	sp	obs #	time	top	moist	veg	under	lam	he d/l
(23 June)	a	153	3P	po	w	3/0	m	C_2	0/0
	♂m	154	3P	po	sw	3/0	m	C_2	0/0
	♀a	155	3P	po	sw	3/0	m	C_1	1/0
					5 jab / 15 sec.				
	p	156	3P	po	sw	3/0	m	C_1	1/0
					peck				
24 June	♂m	157	2P	f	w	4/0	m	C_1	2/0
					9 jab, 1 probe (2 b)				
				f	w	4/0	m	C_1	2/0
					12 jab (2-b)				
				f	sat	4/0	m	C_1	2/0
					12 jab (1-3)				
				f	w	4/0	m	C_2	2/0
					jab				
				f	w	4/0	m	C_2	1/0
					12 jab (1-6)				
				f	sat	4/0	ml	C_1	2/0
					8 jab (2-5) / 15 sec.				
♀Pf	158	2P		po	pw	(8" deep)			
					rotate. litter fred.				
♀Pf	159	2P		po	sw	4/0	m	C_2	2/1
					18 peck				
p	160	2P		f	sw	4/0	m	C_2	2/0
					9 peck				
♂Pf	161	2P		po	pw	2/0	m	C_1	4/0
Pf				po	pw	(6" deep)			
					rotate.				

Maclean
1965

(24 June)	p	162	3P	f	sw	4/0	m	C_3	2/0
					peck				
				po	sw	3/0	m	C_2	1/0
					7 jab				
				po	sw	3/0	m	C_2	1/0
					9 jab				
				f	sar	4/0	m	C_3	1/0
					7 peck				
				po	sw	3/0	m	C_3	1/0
					7 peck				
				po	sw	3/0	m	C_3	1/0
					7 peck				
	p	163	3P	po	sw	4/0	m	C_2	0/0
					9 peck, 2 jab				
					peck 'looking'; jab 'taking'.				
				po	sw	4/0	m	C_1	2/0
					8 peck, 2 jab				
	a	164	3P	lp	w	3/0	ml	C_2	0/0
					7 jab				
				lp	w	3/0	ml	C_2	0/0
					10 jab				
				lp	w	3/0	ml	C_2	0/0
					7 jab				
				f	sw	3/0	m	C_2	0/0
					9 jab				
				po	sw	3/0	m	C_1	1/0
					continual jab				

Maclean
1965

	sp.	obs#	time	top	moist	veg g/f	mor	lem	k_T d/l
(24 June)	a			po	sat	4/0	m	C_2	0/0
					continual jab				
	a	165	3P	po	sw	3/0	m	C_1	0/0
					14 jab, 3 probe (3-8)				
				po	sw	3/0	m	C_1	0/0
					13 deep jab (3-10)				
				po	sw	3/0	m	C_1	0/0
					7 jab, 6 probe				
	Pd	166	4P	f	w	2/0	m	C_0	0/0
					3 peek				
				po	pw	2/0	m	C_0	0/0
					2 peek, 3 jab				
				f	w	3/0	m	C_2	0/0
					6 peek				
				f	w	3/0	ml	C_2	0/0
					2 peek, 1 jab				
				f	w	3/0	ml	C_2	0/0
					4 peek, 1 jab				
	b	167	4P	f	sw	4/0	m	$C_3 g_r$	0/0
				f	sat	4/0	m	$C_3 g_r$	0/0
				f	sat	3/0	m	C_3	0/0
	p	168	5P	f	sat	3/0	m	C_1	0/0
					7 peek				
				po	sw	2/0	m	C_0	0/0
					7 peek				

Maclean
1965

	sp	obs #	time	top ~~veg~~	dist	veg g/f	under	lim	hit d/l
(24 June)	a	169	5P	f	sat	3/0	m	gr.	0/0
					12 jab				
				f	sat	3/0	m	C_2	2/0
				f	sw	4/0	m	C_2	1/0
					14 jab				
	♂ m	170	5P	po	sw	4/0	m	C_3	0/0
					4 jab, 4 probe (1-7)				
25 June									
	♀ m	171	8P	lp	w	3/0	ml	C_2	1/0
					12 jab + probe				
				lp	sat	3/0	m	C_2	1/0
					13 jab				
				m	d	2/0	ml	C_2	0/0
					10 peck				
				lp	w	4/0	ml	C_3	0/0
					12 jab (2-6)				
				lp	w	3/0	ml	C_2	2/0
					10 jab (3-7)				
	p	172	8P	po	sw	3/0	m	C_1	1/0
					10 peck				
				po	sw	3/0	m	C_1	1/0
					15 peck				
				po	sw	3/0	m	C_1	1/0
					12 peck				
				po	sw	3/0	m	C_1	1/0
					11 peck				

Moelua
1965

(25 June)	♂a	173	8P	lp	w	3/0	ml	C_3gr	0/0
					7 jab, 3 probe.				
	♀m	174	9P	lp	w	3/0	ml	C_3	0/0
					12 jab				
				lp	w	3/0	ml	C_3	0/0
				lp	sat	4/0	ml	C_3	0/0
				lp	sat	4/0	ml	C_3	0/0
					5 jab.				
	a	175	9P	lp	w	3/0	ml	C_3	0/0
	Pd	176	9P	f	sw	4/0	m	C_2	1/0
					5 peck				
				f	sat	4/0	m	C_3	1/0
					4 peck				
	p	177	9P	f	sat	4/0	m	C_3	0/0
	p	178	9P	po	sw	4/0	m	C_2	0/0
					9 peck (2-6)				
				po	sw	4/0	m	C_2	0/0
					6 peck (2-6)				
				po	sw	4/0	m	C_2	0/0
					7 peck				
	♂a	179	10P	f	sat	3/0	ml	C_3	0/0
	Pd	180	10P	f	sat	4/0	m	C_3	2/0
					3 jab				
				f	sw	3/0	m	C_3gr	0/0
					2 probe				
	a	181	10P	f	sat	4/0	m	C_3	0/0

Maclean
1965

(25 June)	♂a	182	10P	f	sat	3/1 willow	m	C_2	2/0
					6 jab				
26 June	a	183	4P	po	sw	2/0	m	C_3	0/0
					19 probe				
				po	sw	2/0	m	C_3	0/0
					10 probe, 2 jab				
	Pf	184	4P	po	sw	4/0	m	C_2	0/0
	a	185	4P	lp	w	2/0	ml	gr	0/0
	Pd	186	4P	lp	w	2/0	ml	C_2	0/0
					5 peck				
	a	187	4P	f	sw	4/0	m	C_3	0/0
					6 jab (4-10) - 1 success.				
				f	sw	4/0	m	C_3	0/0
				f	sw	4/0	m	C_3	0/0
					12 jab (2-6)				
				po	sw	4/0	m	C_3	0/0
					8 jab				
				po	sw	4/0	m	C_3	0/0
					11 jab				
				po	sw	4/0	m	C_3	0/0
					5 jab				
	♂m	188	4P	f	sw	4/0	m	C_2	1/0
				f	sw	3/0	m	C_3	0/0
					10 jab				
				f	sw	3/0	m	C_3	0/0
					5 jab, 1 peck				

Maclean
1965

(26 June)	♂ m	188 (cont)		f	sw	4/0	m	C2	1/0
					8 jab				
				f	sw	4/0	m	C2	1/0
27 June	♂ m	189	2P	lp	sat	4/0	m	C3	0/0
					12 probe				
	♀ m	190	3P	f	sw	4/0	m	C3	0/0
					7 jab, 1 probe.				
				f	sw	4/0	m	C3	1/0
					4 jab				
	♂ m	191	3P	f	sw	4/0	m	C3	0/0
					1 ser jab, 1 probe + 7 exp. peck.				
				f	sw	4/0	m	C3	0/0
					2 probe (5+), 1 jab (4)				
				f	sw	4/0	m	C3	0/0
					3 jab, 1 probe.				
	♀ m	192	3P	f	sw	4/0	m	C3	2/0
					6 jab				
				f	sw	4/0	m	C3	0/0
					13 probe.				
	♂ m	193	3P	f	sw	4/0	m	C2	2/0
					3 jab				
	Pd	194	3P	f	sw	3/0	ml	C3 gr	0/0
					4 peck				
				f	sat	3/0	ml	C3 gr	0/0
					3 peck				
				f	sw	3/0	m	C3	0/0
					3 peck.				

Maclean
1965

(27 June)	♂ m	195	4P		f	sat	4/0	m	C_3 gr	0/0
					f	sw	4/0	m	C_3 gr	0/0
	m	196	4P		f	sw	4/0	m	C_3	0/0
						8 job				
	Pd	197	4P		f	sat	4/0	m	C_3 gr	0/0
						4 peck				
	♀ m	198	4P		f	sw	4/0	m	C_3	0/0
						7 job				
					f	sw	4/0	m	C_3	0/0
						3 job, 1 probe.				
	♂ m	199	5P		f	sw	4/0	m	C_2	0/0
						8 job				
	Pd	200	5P		f	sat	4/0	m	C_2	2/0
						3 peck				
	p	201	5P		po	sw	4/0	m	C_3	1/1
	♀ m	202	5P		po	sw	4/0	m	C_1	0/0
	p	203	5P		f	sw	4/0	m	C_2	2/0
28 June	b	204	4P		rp	w	3/0	ml	C_3	0/0
						peck				
					rp	d	1/0	ml	C_2	0/0
	a	205	4P		po	sw	4/0	m	C_3	0/1
						near contin, very deep job				
						(9 jobs 1 probe)				
					po	sw	4/0	m	C_3	0/1
						10 deep jobs				

Maclean
1965

28 June	a	205 (cont)		po	sat	4/0	m	C_3	0/0
					2 leap jab near contin.				
				po	sat	4/0	m	C_3	0/0
					6 probe				
	♂ m	206	4P	po	pw	4/0	m	C_3	0/0
					probe				
				po	sw	4/0	m	C_3	0/0
					14 probe (1-6)				
				po	sw	4/0	m	C_3	0/0
					11 probe (1-6)				
	♂ m	207	4P	f	sw	4/0	m	C_3	0/0
					9 jab (1-6)				
				po	sw	4/0	m	C_3	0/0
					5 probe				
				po	sw	4/0	m	C_3	0/0
					5 jab, 1 probe				
				po	sat	4/0	m	C_2	2/0
					6 jab, 1 probe				
				po	sw	4/0	m	C_3	0/0
					3 jab, 3 probe				
	♂ m	208	5P	f	sw	4/0	m	C_3	0/0
					11 probe				
	♀ m	209	5P	f	sw	4/0	m	C_3	0/0
					12 probe				
	♂ m	210	5P	f	sw	4/0	m	C_3	0/0
					6 probe, 1 jab (4-10)				

Maclean
1965

28 June	a	211	5P	f	sw	2/0	m	C_1	0/0
					12 jab				
	Pd	212	8P	f	sw	3/0	ml	C_1	2/0
					2 peck				
	♀ m	213	9P	po	pw	(3" deep)			
					jab into floating cuttings + litter				
29 June	♂ m	214	2P	f	sw	4/0	m	C_3	0/0
					4 peck				
				f	sw	4/0	m	C_3	0/0
					work actively; peck.				
	♂ m	215	2P	po	sw	4/0	m	C_3	0/0
					5 jab (4±); 7 peck				
	♀ m	216		po	sw	4/0	m	C_3	0/0
	♂ m	217		po	sw	4/0	m	C_3	0/0
					15 jab (1-5)				
				po	sw	4/0	m	C_3	0/0
					12 jab (2-7)				
	Pd	218		po	sw	4/0	m	C_3	0/0
	♀ m	219		f	sw	4/0	m	C_3	0/0
					continuous jab				
				f	sw	4/0	m	C_3	0/0
					continuous jab.				
	♂ m	220		f	sw	4/0	m	C_3	0/0
					continuous jab				
				f	sw	4/0	m	C_3	0/0
					continuous jab				

Maclean
1965

[29 June]	♂m ~~Pd~~	221		f	sw	4/0	m	C_3	0/0
					6 probe, 3 jab, 2 peck				
	Pd	222		f	sat	3/0	m	C_3	0/0
					2 peck				
	mauri	223		f	sw	4/0	m	C_3	0/0
					7 jab				
				f	sw	4/0	m	C_3	0/0
					continuous deep jab.				
				f	sw	4/0	m	C_3	0/0
				m	sat	4/0	m	C_3	0/0
	♂m	224		f	sw	4/0	m	C_3	0/0
	♂m	225		f	sat	4/0	ml	C_3	0/0
					6 sat (4-10) jab				
				f	sw	4/0	ml	C_3	0/0
					8 sat (4-10) jab				
	♂f	226		f	w	3/0	ml	C_3	0/0
					8 sat (2-5) jab				
				f	w	3/0	ml	C_3	0/0
	♂m	227		po	sw	3/0	m	C_3	0/0
	♀m	228		po	sw	3/0	m	C_3	0/0
	♀m	229		f	sw	4/0	m	C_2	2/0
	♀	230		f	sat	4/0	m	C_2	2/0
	♂m	231		f	sw	2/0	m	C_1	2/0
					8 probe				
	♀	232		f	sat	1/0	m	C_0	1/1
					12 peck				
	♀m	233		f	sw	3/0	m	C_3	0/0

Maclean
1965

1 July									
	b	234		f	w	3/0	Um	Co	2/0
					8 jab	(2-8)			
				f	w	3/0	m	Co	2/0
					continuous jab				
	p	235		f	sw	3/0	m	Co	1/1
				po	sw	3/0	m	Co	2/1
	fm	236		f	w	3/0	m	C2	2/1
				f	w	2/0	m	Co	0/0
	p	237		f	sw	4/0	m	C2	2/0
	fm	238		m	w	2/0	ml	Co	2/1
					8 pecks				
	b	239		ch	w	4/0	m	C2	1/0
	p	240		po	sw	4/0	m	C3	0/0
2 July									
	b	241		f	w	3/0	m	Co	2/0
					12 pecks				
				f	w	3/0	m	Co	2/0
					8 peck				
				f	w	3/0	m	Co	2/0
					6 peck				
				f	w	3/0	m	Co	2/0
					8 peck				
	b	242		m	w	4/0	m	Co	1/0
					10 peck (jab?)				
				m	w	4/0	m	Co	1/0
					8 peck				
	b	243		lp	w	4/0	m	C2	1/0

Maclean
1965

(2 July)									
	♂ m	244		f	sw	4/0	m	C_2	2/1
					(↑ 2" deep)				
				f	sw	4/0	m	C_3	0/0
	♀ m	245		f	sar	4/0	m	C_3	0/0
					11 jab				
	♂ m	246		f	sw	2/0	m	C_3	3/5 PBH
					16 jab (2-5) + 4 peck				
	♀ m	247		po	pw	3/0	m	C_3	0/0
					8 jab (4-10)				
	♀ m	248		f	sw	3/0	m	C_3	2/2
	♂ m	249		f	sw	4/0	m	C_3	0/0
					11 jab (2-8)				
	mauri	250		f	sw	3/0	m	C_3	1/1
				po	sar	3/0	m	C_3	0/0
					peck (no count)				
3 July									
	a	251	4P	lp	sar	3/0	m	C_2	2/1
					4 jab				
				m	d	2/0	ml	C_2	2/1
					continual shallow jab.				
				m	d	2/0	ml	C_2	2/1
					cont. shal. jab				
				m	w	2/0	ml	C_3	0/0
					cont shal. jab				
	p	252	4P	po	sar	2/0	m	C_2	2/1
					8 peck (2-4)				

Jackson
1965

13 July	♂ m	253	AP	po	sdt	3/0	m	C_2	2/0
				po	sdt	2/0	m	C_0	3/0
4 July									
	♂ m	254	12P	f	sw	3/0	m	C_3	2/1
				7 ser. probe (4-12)					
				f	sw	3/0	m	C_3	2/1
				9 jab, 3 probe (3-9)					
				into floating litter.					
				f	sw	3/0	m	C_3	2/1
				8 probe					
				f	sw	3/0	m	C_3	2/1
				7 probe					
				f	sw	3/0	m	C_3	2/1
				11 probe (3-8)					
	♂ m	255	1P	f	sdt	4/0	m	C_3	2/0
	p, ♀ f, ♀ m	256	1P	f	sdt	2/0	m	C_2	3/1
				pus-peck; fus, mel - jab.					
	p	257	1P	f	sdt	2/0	m	C_2	3/1
				7 peck or u. shd. jab (1-5)					
				f	sdt	2/0	m	C_2	3/1
				6 peck					
	♂ f	258	1P	f	sw	4/0	m	C_1	2/0
	♀ m	259	1P	f	sw	4/0	m	C_1	2/0
	a	260	3P	f	sw	3/0	m	C_3	0/0
	Pd	261	3P	lp	d	1/0	ml	C_2	0/0
				5 probe.					

Maclean
1965

4 July)	Pd	(261 cont)	3P	lp	d	1/0	ml	C2	0/0
				3 jab, 1 peck, 1 probe.					
				lp	d	1/0	ml	C2	0/0
				5 peck.					
	Pd	262	4P	lp	w	3/0	m	C3	1/1
	♂ m	263		f	sw	3/0	m	C3	3/3
	♂ m	264		f	sw	3/0	m	C3	2/2
	♂ m	265		f	sw	3/0	m	C3	2/2
5 July									
	Pf	266	3P	f	sw	2/0	m	C0	1/1
	a	267	3P	lp	w	1/0	ml	C3	0/0
	Pd	268	3P	lp	w	2/0	ml	C3	0/0
6 July									
	b	269	2P	lp	w	2/0	ml	C1	1/1
					12 peck				
	Pf	270	2P	f	sw	(4" deep)			
					rotate-peck				
	a	271	2P	f	sw	3/0	m	C3	3/2
					7 jab (2-4)				
				f	sdt	3/0	m	C3	4/4
	♂ m	272	2P	f	sw	3/0	m	C3	0/0
					8 peck				
				f	sdt	3/0	m	C3	1/1
	p	273	2P	f	sw	2/0	m	C3	3/2
					7 peck				
				f	sw	2/0	m	C3	3/2
					5 peck, 2 jab				
				f	sw	2/0	m	C3	3/2

Maclean
1965

(6 July)

				2	jab / 15 sec.				
♂ m	274			f	sw	(floating litter)		C_3	
					9 deep jab				
				f	sw	(floating litter)		C_3	
					continual jab.				
				f	sw	(floating litter)		C_3	
					11 jab (5-12)				
				f	sw	(floating litter)		C_3	
					9 jab (4-10)				
				f	sw	(floating litter)		C_3	
					6 Jab (3-15)				
♀ m	275	2P		f	sw	2/0	m	C_3	1/1
					7 jab, 4 peck				
♀ m	276	3P		f	sat	2/0	m	C_1	3/1
Pd	277	3P		f	sw	3/0	m	C_1	2/0
f	278	3P		f	sw	3/0	m	C_3	1/1
					9 shallow jab				
				f	sw	3/0	m	C_3	1/1
					6 shal. jab				
				f	sw	3/0	m	C_3	1/1
					6 jab (1-4)				
♀ m	279	3P		f	sw	3/0	m	C_3	1/1
					6 jab (2-4)				
♀ m	280	4P		f	sw	3/0	m	C_2	4/2
♂ m	281	4P		f	sat	2/0	m	C_3	0/0
Pd	282	4P		f	sat	4/0	m	C_3	0/0
					4 peck				

Maclean
1965

6 July)	♂ m	283	4P		m	sdt	1/0	m	C_1	0/0
	♀ m	284	4P		lp	w	2/0	m	C_0	1/1
	♂ m	285	10P		f	w	3/0	m	C_3	1/1
					f	sdt	2/0	m	C_3	0/0
					5 peck, 6 jab					
	♀ m	286	10P		f	sdt	3/0	m	C_3	1/1
					jab					
	a	287	10P		f	sw	2/0	m	C_3	1/1
					continual jab.					
7 July	p	288	2P		f	sdt	2/0	m	C_3	1/1
					7 peck					
					f	sw	2/0	m	C_3	1/1
	♀ m	289	2P		f	sdt	2/0	m	C_3	1/1
					6 jab (4-16)					
all together	♂ m	290	2P		f	sw	2/0	m	C_3	2/2
					2 peck.					
	♂ m	291	2P		f	sw	2/0	m	C_3	2/2
					6 jab, 3 peck.					
	♀ m	292	2P		f	sdt	3/0	m	C_3	1/1
					15 sing. jab					
	p	293	3P		lp	sdt	1/0	m	C_1	0/0
	♀ m	294	3P		f	sdt	(litter accumulation -1")			
					jab.					
	♀ m	295	3P		f	sw	(litter accumulation)			
	♂ m	296	4P		f	sdt	2/0	m	C_3	1/1
					7 jab (4-10)					

Maclean
1965

(7 July)	♂ m	297	4P	f	sdt	2/0	m	C3	2/2
					continual jab				
				f	sdt	2/0	m	C3	2/2
					continual jab – continued				
					4 min. – collected – 7-VII-1				
	♀ m	298	4P	f	sdt	3/0	m	C3	2/2
					collected – 7-VII-2				
	♀ m	299	4P	f	sw	1/0	m	C3	2/2
					collected – 7-VII-3.				
	a	300	4P	f	sdt	2/0	m	C3	2/2
	a	301	5P	f	sdt	1/0	m	C3	1/1
					jab.				
8 July	♂ m	302	1P	f	sw	2/0	m	C3	2/2
					jab				
	♀ m	303	2P	f	sw	2/0	m	C3	2/2
11 July	♂ m	304	10 A	f	sw	2/0	m	C3	0/0
					22 shallow jab (1-4)				
				f	sw	2/0	m	C3	0/0
					16 shal. jab (1-4)				
				f	sw	2/0	m	C3	0/0
					12 shal. jab (1-8)				
				f	sw	2/0	m	C3	0/0
					jab. thick litter layer.				

Maclean
1965

(11 July)	♂m	305	10A	f	sw	2/0	m	C3	2/2
				12 shallow jab (2-12)					
				continued for 5 min.					
				collected - # 433 (obs. 1)					
	♂m	306	1P	f	sdt	2/0	ml	C2	2/1
	a	307		f	w	2/2 (sdlix)	m	C2	3/2
				8 jab					
				continued - continual jab - 4 min.					
				collected - # 428.					
	♀m	308		f	w	3/0	m	C2	3/2
				6 jab					
				f	w	2/2	m	C2	3/2
				jab and peck					
				Collected - # 432.					
	♀a	309	2P	f	w	4/0	m	C1	3/1
				f	w	3/0	m	C3	1/1
				jab - ca 10 (4-10)					
				f	w	4/0	m	C2	2/1
				cont. jab (1-3)					
	♂f	310	3P	f	sdt	1/0	m	C0	1/0
	♀m	311	3P	f	sw	3/0	m	C1	5/4
				tr	sdt	1/0	m	C3	0/0
				tr	sdt	2/0	m	C2	2/2
12 July									
	a	312	8P	f	w	4/0	m	C2	3/2
13 July	♂m	313		po	sw	2/0	m	C?	4/4
				collected - # 431					

Maclean
1965

(13 July)	♂m	314		f	sat	1/0	m	C3	2/2
					collected - # 430				
	a	315		p	sat	1/0	m	C3	0/0
					dense litter - job.				
					collected - # 427.				
14 July	Pd	316	9P	f	sat	1/0	m	C3	4/4
					dense litter layer.				
					flock of ca. 15.				
17 July	♀m	317	4P	lp	d	1/0	ml	C0	0/0
					3 peck				
25 July	Pd	318	9A	lp	d	2/0	ml	C2	2/2
					collected - # 446.				
	♂a	319	10A	lp	d	3/0	ml	C1	4/2
					collected - #				
	♂m	320	11A	f	d	4/0	m	C1	3/3
	♀m	321	11A	f	d	4/0	m	C1	3/3
					collected - # 441, 442				
	jw.a	322	11A	f	w	3/0	m	C1	3/3
					2, w/ 2 adults.				
	jw.a	323	12P	f	d	3/1	m	C1	3/3
					2, w/ 2 adults				
	a	324	12P	f	w	3/0	m	C1	4/3
				tr	w	3/0	m	C1	4/3
					collected - # 445.				
	♂m	325	1P	Page	w	3/0	m	C2	2/2
					collected - # 443				
	♀m	326	1P	lo	sat	3/0	m	C1	6/5
					collected - # 444.				

Maclean
1965

(25 July)	jw.a	327	2P	f	w	3/0	m	C_2	4/4
	jw.a	328	2P	lp	w	3/0	ml	C_2	3/2
	jw.a	329	2P	f	w	3/1	ml	C_2	3/3
	Pd	330	3P	mud flats					
				collected - #447.					
	♀m	331	5P	lp	w	3/0	m	C_1	4/3
				collected - # 440.					
	Pd	332	7P	lp	d	2/2	m	C_0	2/1
				f	d	3/1	m	C_2	3/2
27 July	a	333	3P	lp	d	1/0	m	C_3	2/0
	a	334	3P	lp	d	2/0	ml	C_2	2/1
				peck					
	a	335	3P	lp	d	2/0	ml	C_2	2/1
				peck					
	a	336	3P	tr	w	2/0	m	C_3	5/5
	a	337	3P	po	w	0/0	muck-black		
				jab to 1.5 cm.					
	a	338	3P	lp	d	2/0	ml	C_1	3/2
				peck					
	a	339	3P	lp	d	1/0	ml	C_1	2/1
	a	340	3P	lp	d	1/0	ml	C_1	2/1
				3 peck.					
		[redacted]		lp	d	1/0	ml	C_1	2/1
				1 peck					
	a	341	4P	lp	d	3/0	ml	C_3	2/2
				peck.					

Maclean
1965

29 July	jw. m.	342	4P						

S. MacLean

1964 - 1966

Journal:

1966 Barrow, Alaska
feeding observation tables
insect samples

Maclean
1966

Journal

1 June

Barrow, Alaska

Spent most of the day in Fairbanks, then arrived at Barrow at 1935 via Air Alaska (new name - same old Wien). Tundra from Brooks Range on was 95% snow covered. Standing water in rivers, but they did not appear to be running. Snow looked wet - as if it was above freezing down below. I think we are arriving in plenty of time.

Barrow weather was beautiful - clear, ca. 33°, little wind. Melt around town appears about normal.

Saw a few people at the air port, then went into camp and visited there for the rest of the evening.

2 June

Barrow, Alaska

Weather still good. Started arranging the lab and checking out equipment, then put up a pair of birds (Robin and warbler) from POW-1. I guess I'll remember how to do it.

Took a weasel out to beach ridge and Pitelka's Plot. Even the highest part of the ridge is but 25% exposed; P's plot is 99% covered. Only a few longspurs - more ♂♂ than ♀♀ seen. Those ♀♀ seen were

Machea
1966

with ♂♂. Sporadic low intensity songs, but no encounters. Also a few paired buntings.

Went in to meet the plane. It was delayed until 11:30 P.M. (yep - same old Wien), then a C-46 lumbered onto the strip bringing Niko Verbeek and Eunice Brower, among others. Niko's introduction to the Arctic was made complete when the truck broke down halfway back to camp, and they had to bum a cold ride in the back of a Vinnell pickup.

The first evidence of peeps as I was walking in to town: heard several turnstones and one displaying red-backed sandpiper by the dump, then saw a turnstone. There are many glaucous gulls around, and large flocks of Eiders still going by. Groups of white-crowned sparrows and at least a pair of slate colored juncos in camp.

5 June

Barrow, Alaska

Got Niko squared away in the morning, and after a fortuitous encounter with Dr. Brewer, Herr Director, drove out to the field.

MacLean,
1966

Niko did well in his first experience with the weasel - there will be no worries with him, I'm sure.

Stopped on Beach Ridge to listen to the magnificent sounds of Calidris alpina. There were at least two males - very active and not yet settled, plus a feeding group of 3. Longspurs were spreading out, but not yet in full song. Rose to ca. 10 ft or less, and completed 1 or 2 songs in glide.

Drove across Central Marsh towards Gasline Ridge and encountered Golden Plover which displayed very well. Obvious "change of gear" in flight as he went into the display. Two other lone Golden Plovers seen - no evidence of pairing. Gasline ridge about like Beach Ridge - crest is ca. 30% exposed. Redbacks and longspurs as Beach Ridge.

Tried to meet Pitelka in the evening - Wien didn't make it. Circled overhead in thick fog, then returned to FAI.

4 June

Barrow, Alaska

Morning - looked around camp area, then harrassed ARL for equipment and our refrigerator. Weather is again beautiful, so

Macheda
1966

checked out the UHER to see about getting some display down on tape.
After lunch and a Merle Solomon haircut went out to the tundra. Melt on beach ridge is noticeably advanced. Can you believe working on June 4 with no parka, no jacket, and sleeves rolled up? this is ridiculous - no wind, sunny - I got my face sunburned. Two pairs of red-backs are localized on Beach Ridge, with some display. Another ♂ closer to C+GS was less stable; when flushed, flew 1/4 mile away towards AACS. Longspur display much advanced. Most ♂♂ completing 4 themes per glide; rising to ca. 30 - 40 ft.. Nothing else new.
Drove over to Pitelka's Plot - now has large exposed areas along crest of ridge (West edge of plot). Entire plot maybe 5% exposed. 2 prs. of apparently localized red-backs. Saw one good chase - but birds didn't look like red-backs to me. Maybe turnstones, but couldn't tell for sure. Drove along East edge of plot, and took a ♂ red-back (alone) feeding off of NE corner of plot.

Maclean
1966

Came in and analyzed first stomach of the year: Tipula lar., 1 very fresh and still in oesophagus. Good datum. Put 'im up as skin.

Went in to meet Pitelka, and when he didn't make it again gave up and went to Dora (Edwardson) and Mike Daniel's (Wien) wedding reception at the armory.

5 June Barrow, Alaska

Pitelka finally made it in at 1:30 a.m. this morning. Unfortunately, with Frankie handing out vessel keys, they are not available on Sundays. Should have thought of this yesterday afternoon. Talked a while with Pitelka as fog rolled in. By afternoon it was very foggy. Went in to town and visited with Ahgeaks. Fog became o-o, but lifted by the time I walked home in beautiful, clear weather.

6 June Barrow, Alaska

After a few morning administrative details and vessel problems headed out for survey of the area with Pitelka and Niko. Weather above freezing, but a wicked East wind blowing a steady 15 knots, and fog

Machedn
1966

reducing visibility. First to Beach Ridge, where Baird's were seen and heard in good numbers - probably at least 3♂♂ - plus red-backs. Melt still further advanced, and remaining snow is very soft and wet. In best area top of ridge is ca. 40% exposed.

Drove across Central Marsh to Pitelka's Plot - there only a few quiet red-backs. Here - as other sites - Longspurs were quiet. Went over to gasline ridge - again quiet. 2 prs. of red-backs - one good chase. On to Voth area - it has greatly opened up in the past two days. Flat across from Cake Eater is 75% exposed, with abundant activity. Apparently a group of ca. 10 red-backs was newly arrived and beginning to disperse. 2 prs. of Semi-pals - both ♂♂ displaying. 1 pr. Turnstones, ♂ bairdii, and 1 golden plover also in the area. Collected 3 red-backs, then drove in via gasline road.

After lunch more equipment procurement, then went over system for recording feeding observations. Prepared new instruction sheets.

Mackea
1966

Wessel wouldn't start - wasted more time getting another, then went out to Beach Ridge with Niko to begin recording. Got some data on Bairds (pair-localized and actively feeding) and ♂ red back (collected, SU 486). Wind has increased to a steady 18-20 knots, but still above freezing. Not too comfortable. Came in at 6:00 and talked to Univ. of Hawaii entomologists until dinner with same and Lewellyns. After dinner worked over yesterday's specimens, then went into town. Went to show with Edna and her mom - Judgement at Nuremburg - toodamn long - my butt got sore!

7 June

Barrow, Alaska

Cold and windy again. Slow morning; slow indeed. Worked on specimens and notes, and prepared equipment for plane to Meade. After lunch Pitelka and equipment left for Meade; Niko and I left for Voth Area. Stopped by W. bank of Honeybucket Lagoon, across from FAA. Saw dispersing flock of ca. 30 redbacks, and collected feeding observations. Much activity, but no full display. Continued on to

Macleod
1966

Both areas – I worked Cake Eater side, Niko E. side of road. Another dispersing group of ca. 15 redbacks here. Also 1 semipal, pair of turnstones, pair of golden plovers. Took feeding observations then collected semi-pal near road. Quit and came in just as Pitelka was landing at Barrow after dropping supplies at Meade due to poor condition of strip.

Finished stomachs and put up semi-pal, then returned to field after dinner. Now below freezing, with the same strong wind from the NE. took soil corer along and collected 7 sod cores. Permafrost was just below surface, so cores were shallow. Should, I discovered, use cans to bring in cores to preserve their positional integrity

Group of ca. 60 redbacks now quite cohesive in Cake Eater area – flying actively.

Vegetation, even at this early stage, is showing definite signs of activity. Saw first ♀ willow buds on 4 June. today saw developing <u>Pedicularus</u> – ca. 1 inch high. In several places

Maclean
1966

there was noticeable growth of grass stems - several of the cores taken this evening showed 1/2 inch green at base.

8 June

Barrow, Alaska

Missed breakfast, darn it. No sign of Pitelka by 9:30, so walked out through Drum area to Micro-Met, then along beach ridge towards C+GS, then in. Very quiet - small bir of bairds and semi-pal display - redbacks and Longspurs almost completely quiet. Funny. Weather is better - temperature around 35°, wind ca. 10-12 kts. from East - about a typical early summer day. Not much reason for quiet.

Drum area is slow in melt - very little exposed ground. Not much to attract shorebirds. There is no denying that the season is late.

Spent the whole darn afternoon picking through yesterday's sod samples. Discouraging business - not a tipulid in the lot, and not enough to give a semi-pal a square meal. Collembolans, nematodes, 2 small spiders, 1 Chironomid larvae, 1 staphylinid larva.

Maclean
1966

After dinner looked at stomach of orange-crowned warbler Pitelka took from his plot. Full of all sorts of goodies - all uplands stuff. If a lousy warbler can do it, the sandpipers sure should be able to!

Went out Voth Road - weather getting colder and windier. About 32° now. Saw first white-rump in Britton's Area - 1 bird with group of red-backs. 13 red backs - flying actively as cohesive flock - very little display activity. Best display came from pair of turnstones. Checked exposed area by W. shore of Honeybucket Lagoon - 1 turnstone and a quiet pair of red-backs. On to Cake Eater area for only activity of evening, and that wasn't much. 1 ♂ alpina was excited - chasing a ♂ and (later) a ♀, and giving ground display. 3 ♂ semi-pals were performing, but no interaction. Pair of turnstones in area. Turnstones, at least, are up this year. Hopefully - the other species are just waiting for good weather. All in all - it was another quiet night. Quit when the fog rolled in.

Machean
1966

9 June

Barrow, Alaska

Weather colder and windier. There is no doubt of it - the season is late. We need some warm weather before it is too late to recover. Out to both areas with Pitelka for soo samples. Intent was to take them where birds were seen feeding. Trouble was - birds weren't seen feeding. Some semi-pal activity; took ♀ for stomach and breeding condition information. Watched turnstones + red backs for a couple of feeding observations and two soo samples. Then drove in via gasline and Beach Ridges. Not much to see there but snow. A prior pair of red-backs near mound on gasline ridge, but not a sound. Still surprising is the low level of longspur and snow bunting activity. Birds are paired and territorial, but not doing much. Guess we'll have to remove some to see what is going on.

After lunch decided to go out to bluffs by Footprint lake and slaughter birds. Only bare ground was ridge along west side of lake. Pitelka took some ♀ Longspurs to check on breeding progress.

Maclean
1966

Shorebirds — 1 pair of turnstones, 1 pr. of golden Plovers, and about 20 red-backs. It appeared that a new group had moved in on about 3 pairs of settled birds. Collected 4 and watched awhile, then came in and showered.

After Dinner went to town, then came back and worked on specimens — todays stomachs, etc..

10 June

Barrow, Alaska

Looked at stomachs of yesterday's ♀ Longspurs — more overlap, even *Tipula* larvae! Should have looked at these beasts before. Afterwards went out to Voth Area to check progress. Weather greatly improved — ~~temp.~~ temp. > 40°, and raining quite heavily for June. this should melt some snow.

Saw a ♂ pectoral with well developed throat sac across from FAA — a welcome sight. Hope more are coming soon. Redbacks in Voth area are still not sorted out;

In the afternoon went ~~fr~~ with Pitelka and Niko first to N. end of P's Plot. that was the most discouraging moment of the summer thus far.

Machean
1966

Little but snow, in all directions, and hardly a sound to be heard. that whole arm of the ridge has hardly started coming out. Took some pictures, including a caribou on the tundra, then drove over to bluffs by Elson Lagoon. My faith was restored. Successive pairs of settled redbacks, but still scrapping over boundaries. Activity still suggestive of early June. Also a pair of Pectorals, with ♂ in good voice, and two white-rumps, probably a pair. Phalaropes were coming by - mostly seen in the air. And, a major event, Niko stumbled upon a turnstone nest with two eggs. And there was more: saw a pair of Spectacled Eiders fly by, pointed East. All in all, an encouraging afternoon.

Also stopped to check red-fox den on Beach Ridge, w. of C. + G.S.. Definitely fresh since last year. A few scats and old ptarmigan feathers around. Then, as I looked down one entrance, fox ran out another 10 feet away and ran ca. 200 m. West down the ridge before stopping to watch.

In the evening walked into town

Macean
1966

in warm, overcast weather. Didn't see much on the way in. Walked down the Browerville ridge towards Voth Area with Edna. Crest of ridge is mostly clear except for deep snow filled gullies running toward village lagoon. Very good semi-pal activity here. Birds appeared mostly settled and paired, with some territorial chasing going on. Several pairs of turnstones - one good territorial scrap out over lagoon. Have to walk this again and more actively collect data.

this is, if nothing else, a good waterfowl year. Except for Steller's Eiders - everything is around in numbers. Several flights of ♂ Pintails today, and Common Eiders as well as Kings. Snow geese, white-fronts, and brants all seen today.

11 June

Barrow, Alaska

Walked out through Drum Area to Beach Ridge. Drum Area is exceptionally slow in coming out this year - only scattered polygon tops are exposed. Good semi-pal activity, but of an early sort - much dispute over boundaries, display.

Machear
1966

Walked down Beach Ridge to C+G.S. ♂ white rump displayed - saw very rapid chase involving two birds. Two pairs of red-backs, pair of semi-pals on ridge; little activity. Returned via AACS and saw Semipalmated Plover sitting quietly on disturbed polygon by Meade River Wainigan road.

In the afternoon drove out road across Beach Ridge - saw ♂ white-rump in same place - then to S. end of P's plot. Pitelka censused plot while Nitecki & I walked down ridge to corner by Wohlslag Slough, and along N. shore of slough. Watched a very cooperative pair of baird's by South end of plot. Not much else cooperated. Saw and observed occasional red-backs and a pair of turnstones in vicinity of CRREL wanigan. Red backs were obviously not completely settled, and boundries were still in dispute. Still not much bare ground for them to settle on.

In the evening went across Wohlslag Slough to do some collecting - and a very successful evening it was. First collected a pair of turnstones - ♀ SM 492 - w/

Macken
1966

two ruptured follicles. Parked the vessel by large exposed area extending from Elson Lagoon ca. 150 m. inland. Great burst of turnstone activity, involving 5 birds flying and making noise at one time, close to Ukpik Slough. Semi-pals were frequent and active - but too busy worrying about sex to feed. Collected 4 of them. Semi-pals, as turnstones, were clumped in South part of exposed area. In North part, closer to Wahlsag Slough, Red phalaropes predominates -- in pairs and groups of up to eight. These were feeding actively. Collected 7 for stomach and gonad analyses. By this time weather was a little brisk, but sunny and pleasant. Finally, regretfully, came in around midnight.

12 June

Barrow, Alaska

Today the melt began in earnest. Warm, sunny weather - and snow should be going fast. Spent most of the day working on last night's stomachs. Director Brewer came by for a "chat", which dragged out, but was not without benefit. Late in the afternoon walked into

Macleod
1966

town and spent the evening socializing, then walked home in more warm, clear weather. Old squaws were seen in good numbers for the first time on the way home, and sandpipers were in good voice. Made it a pleasant walk.

June 13 Barrow, Alaska

In the morning drove out to Cake-Eater and walked from there to village ridge collecting feeding observations. Baird's were very active - chasing in pairs and groups of up to 6 and displaying. Looked like a group recently arrived and now dispersing. Pair of Golden Plovers acted nest-ish just West of Cake-Eater. Phalaropes in good numbers - got some feeding observations. In returning to the weasel, stumbled upon a Curlew sandpiper feeding in disturbed ground on S. side of Uath road. Watched him a while, then lost him, and came in.

After lunch went out to Village Ridge with Pitelka to collect. Melt off is going along rapidly, and remaining snow is all slush. Makes travel difficult. On ridge semi-pals were less conspicuous than previous trips

Machen
1966

here, so Pitelka returned to Voth Area. I continued on ridge and ran into a very active group of at least 7 baird's - 7 were seen flying at once in communal chase. Covered area from Village Lagoon to Village Ridge. Collected 4 - unfortunately all ♂♂, t = 9 to 10 mm.. Found a 4 egg red-back nest near shore of village lagoon. Walked back to Voth Area and watched a ♂ sanderling displaying. Took some feeding observations, then joined Niko and walked in.

In the evening drove out to Beach Ridge with Pitelka and Niko. Heard, nearly simultaneously, song of red-back, semi-pal, baird, golden plover, and 1 each pectoral and white rump. First time this year that all have been heard. Weather was now cold - about freezing, but little wind. I stayed to collect feeding observations while the others drove on to area west of Micro-met. After the initial burst of activity things calmed down, and observations came slowly. Walked toward C + G S, but was stopped by slush in deep ditch across ridge. For the first time one can walk

Maclean
1966

along the ridge without stepping on snow.
Collected a few observations until my wet feet got cold, then walked to road and rode in on returning weasel.

14 June

Barrow, Alaska

Spent the morning on notes and stomachs. Pitelka brought in 5 semi-pals and a turnstone to go with my bairds'.
After lunch drove to Pitelka's Plot, then walked around Holmes' Marass to Elson Lagoon with Niko. The ridge is now good walking; the marass is a quagmire of water and slush. Collected a few observations on and around the plot, but hurried to spend most of the afternoon by Elson Lagoon. Red-backs and phalaropes were frequent there, and we collected a good number of observations. Failed to turn up the hoped-for pectorals. Turnstones were active near the nest Niko had found earlier. As he checked this I found another w/ 4 eggs ca. 150 m. S.E., and then another w/ 4 eggs <50 m. S.E. — 3 nests within 150 m.!
It was getting late, so we waded straight across the Marass and managed the trip without going in above our boots.

Meldon
1966

Virtually the entire area is under water, tho'.

In walking up P's Plot saw copulating golden plovers around stake 14, on East side. Also saw frequent large bumblebees today - have to break out Hurd's net if the weather holds.

Returned to the lab to find that Paul DeBenedictis had come in from the Meade during the afternoon. They had sent a plane for him yesterday but he was in the field and hadn't bothered to come in when he heard it land! Anyway - got to find out about that operation. No big surprises as he describes it. The birds are not as dense as I had hoped, but there are enough to work with. As we had expected, habitat distribution is more distinct than at Barrow. I'll reserve further comment until I've been there.

After dinner drove out to Beach Ridge with Paul and Nikonin cold, windy weather. Not much activity at all. Walked from road crossing to Micro-met and back. Saw 2 ♂ pectorals North of ridge, and a few

Maclean
1966

quiet redbacks and longspurs on it. Activity level did not merit pushing weasel through slush to go farther, so returned to lab and B.S.'d until midnight.

Private Drab Flunks the Test

Arthur Hoppe

"A STICK 35 inches long is to be cut so that one piece is one-fourth as long as the other," said Private Oliver Drab, 378-18-4454, frowning mightily. "How many inches long must the shorter piece be?"

"Stop mumbling, Drab, and keep your eyes peeled," snapped Captain Buck Ace, swatting a mosquito with his map case. "There's Viet Cong all round us." He paused and eyed the Private suspiciously. "What do you want a stick for?"

"Oh, I don't want a stick, sir. I just wished I could figure out an answer to the question."

"Look, soldier, we're in a tight spot. You got some sort of plan to get us out?" asked Captain Ace hopefully.

"Well, not exactly, sir. It's just that if I knew the answer to that question I wouldn't be here in the first place."

"What are you talking about, Drab?"

"It's a sample of the questions they asked those college kids back home, sir. Those that knew just how to saw up the stick, they got to stay. Those that didn't, they're going to get sent over here."

★ ★ ★

"OH," SAID Captain Ace, "you're talking about those draft deferment tests for college students."

"Right, sir. Only I don't see why a fellow should be sent over here just because he doesn't know exactly how to cut up a stick. Of course, I guess it wouldn't be much of a handicap if he didn't, seeing as how we don't cut up sticks much. But it wouldn't hurt if he did."

The Captain permitted himself a fatherly smile. "It really isn't a question of cutting up sticks, soldier. It's an intelligence test. The Government feels the more intelligent young men can better serve their country by pursuing knowledge at home. Now, doesn't that make sense?"

"You bet, sir," said Private Drab enthusiastically. "It'd be an awful waste, sending them out here."

"That's the right spirit, soldier," said the Captain, clapping him on the back.

"Thank you, sir. Now, let's see, 35 inches long and one piece has got to be one-fourth the size of the other. Four into 35 . . ."

"Now what are you up to, Drab?"

"Well, sir, I figure if I get the answer, it proves I'm smart. And the Government, not wanting to waste a smart fellow like me, will ship me home for the good of my country. Is it eight something, sir?"

The Captain eyed him coldly. "It's seven, Drab. Now shut up and crawl out there to reconnoiter. Or I'll shoot you myself."

★ ★ ★

"YOU KNOW why I'm out here?" Private Drab said later to his friend, Corporal Partz, as he thoughtfully examined a bullet nick in his helmet. "It's because I'm stupid."

"So what else is new?" said Corporal Partz, spitting carefully over the rim of their foxhole.

"Well, I always suspected as much," said Private Drab sadly. "But somehow I wish the Government wouldn't tell me so."

TV TODAY

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If all goes according to schedule, the three television networks will cover the blast off of the Agena Rocket beginning at approximately 7 a.m. (PDT). At 9:45 a.m. the Gemini Titan Nine, with astronauts Thomas Stafford and Eugene Cernan, is scheduled to lift off from Cape Kennedy. Coverage of docking and rendezvous between the two crafts begins at 7 p.m. (In color).

5 A.M.

5:45 (7) You Can Tell a Story
5:55 3 Farm News

6 A.M.

6:00 3 Rhyme and Reason
(5) Summer Semester
6:15 (7) Dick Tracy
6:25 (4) **Farm News**
10 Focus on Farming
6:30 (4) **Profile**
(5) Medical Knowledge for Man
(7) A.M.: Jim Dunbar
10 Summer Semester
6:55 13 Morning Headlines

7 A.M.

7:00 (4) **3, 8 Today (Color)**
(5) KPIX Morning News
10 Weather
13 Cartoonland
7:05 10 CBS News
12 The Answer
7:25 (4) **Morning Report (Color)**
8 Community Calendar
7:30 (4) **3, 8 Today (Color)**
(5) CBS News
10 Diver Dan
7:35 12 News
7:45 13 Sergeant Preston
7:55 (5) Editorial

8 A.M.

8:00 (5) 10, 12 Captain Kangaroo

1 P.M.

1:00 (2) Divorce Court
(4) 3 The Doctors
(5) 8, 10, 12 Password
(7) 11, 13 Ben Casey
1:30 (4) **3 Another World**
(5) 8, 10, 12 House Party

2 P.M.

2:00 (2) Movie: "Johnny One-Eye," Pat O'Brien, Wayne Morris (1949)
(4) **3 You Don't Say (Color)**
(5) 8, 10, 12 To Tell the Truth
(7) 11, 13 Confidential for Women
2:25 (5) 8, 10, 12 News
2:30 3 Movie: "Beautiful Blonde From Bashful Bend," Betty Grable (1950) (Color)
(4) **Match Game (Color)**
(5) 8, 10, 12 Edge of Night
(7) 11, 13 A Time for Us
2:55 (4) **NBC News**
(7) 11, 13 Women's News

3 P.M.

3:00 (4) **Breaking Point**
(5) 8, 10, 12 The Secret Storm

7 P.M.

7:00 (2) True Adventure (Color)
(4) **National Velvet**
(5) M Squad
6 What's New?
(7) News: Roger Grimsby
8 Dick Van Dyke
(9) The Observing Eye
10 Rifleman
11 Gidget
12 Smothers Brothers
13 Death Valley Days
7:15 (7) News: Peter Jennings
7:30 (2) Jackie Jensen Show
(4) **3 My Mother, the Car: Jerry Van Dyke (Color)**
(5) 10, 12 Daktari! (Color)
6 Dynamics of Desegregation
(7) 11, 13 Combat!
8 Beverly Hillbillies
(9) Books and Authors
7:40 (2) Giants Warmup
7:55 (2) Major League Baseball: Giants vs. Dodgers

8 P.M.

8:00 (4) **3 Please Don't Eat the Daisies (Color)**
6 The Great Society
8 Green Acres
(9) Concert

MacLean
1966

16 June — Barrow to Meade River Coal Mine (Atkasuk), Alaska

Awoke for breakfast, then finished the interrupted night's sleep. Spent most of morning looking at yesterday's stomachs. Phalaropes from one pond (3 birds) were full of adult Plecoptera. Baird was full of tipulid larvae - not surface stuff at all. Walked out into Drum area briefly and listened to Baird's. After lunch threw some gear together and headed for plane for Meade River. Flew in 22X with Guy Shepard. Went by way of the Post-Rogers monument and took some pictures, then another 15-20 miles down coast before turning South. Tundra near Barrow is about 10% snow covered and 65% water covered. Large lakes, as Skroawik, are still solid ice with surface melt ponds. Route missed the Inaru, so we couldn't judge snow conditions there.

Saw no owls and only 3 jaegers all the way down. Meade River area is virtually snow free except for river bluffs. The ground is not too wet, although Paul says much of the melt water has disappeared in the 3 days he was gone.

Spent some time looking at

Machean
1966

Phil Johnson's project. They are concentrating on measuring productivity using a CO_2 analyzer, with concurrent climatic observations. Their instrumentation is impressive — looks like it is ready to produce data which should be of general interest as well as of interesting application to our project here. Tundra production has just begun — very little green is showing. Several Salix spp. are in catkin, and S. reticulata is putting out fresh leaves along the bluffs. Pedicularis are appearing but not yet flowering. Ranunculus (2 spp) flowers have just appeared, as well as Eriophorum. The latter shows many flowers, but little green in the leaves — generally ca. ½ inch at the base.

Next spent some time staring at the ground to see what insects are there. Started on a dry ridge near the instrument warnigan. Numerous Collembolans and frequent spiders; adult Dipterans are evident; saw a few small adult staphylinids. Grey cocoons are frequently encountered, and flying bumblebees are conspicuous. Over wet marsh saw frequent small

Maclean
1966

Dipteran - probably ad. Chironomids. In the water saw an adult Dytiscid plus several unidentified larvae and small adults. All in all - adult insects are more conspicuous (right now) here than at Barrow. This could well be reflected in bird stomachs.

Walked out with Paul to his census plot. It is a good section of a very frequent tundra type here - Eriophorum tussocks with wet Carex between, interrupted by wet and drained pond basins with Carex stands. These basins look like good feeding areas for pectorals and phalaropes, and Paul says they are so used. His plot - in 80 meter squares, 5 squares x 6 squares (400 x 480 m) - has 4 prs. Semi-pals, 1 pr. pectorals, and probably 2 prs. red-backs, plus a pr. of golden plovers along the edge. Longspurs here, as in the entire area, are regularly distributed and less dense than at Barrow. (I can detect no dialect difference, although Paul claims he can detect one. I would bet against him in a test with recordings.)

Mackson
1966

Walked the census plot (just South of the coal mine, with the longer axis along the river bluff), then followed the ridge leading SW. Shorebird activity was not real good, although those birds seen were still performing. Saw no good activity 'till we hit the very large partially drained basin mostly west of camp. There Western sandpipers and Dowitchers were active and conspicuous. Saw westerns twice feeding on wind-blown collembolans on snow, as Paul says semi-pals frequently do. Unfortunately he has not bothered to count and time this (I think he has neglected feeding observations as a whole, although I would not attempt to tell him this.) this presents interesting energetic questions - think I'll try counting tomorrow.

In circling this lake basin we saw and heard all of the local Calidrines - all still displaying. Dowitchers are very conspicuous. Semi-pals are probably the most numerous and widely distributed shorebird. Paul has a good idea of the habitat distribution of the

Mach Edn
1966

birds, and this was a big help. All but Westerns appear to be about at the laying stage - a moderate amount of display, but not much actual interaction. In Westerns there was one display bout involving 5 birds, and several active chases. Later saw 3 ♂ pectorals chasing a ♀, with an active battle on the ground when it ended. All in all - no big surprises in the shorebird department - fewer birds than I had hoped, but enough to let us know what is going on - as I'm sure Paul's notes (if not feeding observations) will reveal.

As for other observations: almost no microtine sign; found a Parasitic Jaeger nest with two eggs. Dark phase ♀ and lighter ♂ both gave persistent ground distraction displays - no bombing. Black-bellied plovers along a few dry ridges - noble birds.

After a good dinner went upstream and across the river with Ray Ipalook and his son to collect some birds for comparison of stomach contents with Barrow birds. Went about 1 mile up, around first part of the big bend. Semi-pals were spaced out closely along the bluff by the river. Territories

Maclean
1966

included the willows along the river bank. Birds were seen displaying over these, and perched on ice blocks along river, as well as feeding on bare mud under the willows. ♂♂ were still defending territories actively - displaying and chasing encroaching birds. Shot 2 ♂♂ - both seen displaying, but both had well developed brood patches (SM 500, 501). Walked over marsh broken by frequent ponds covering river terrace. Saw 1 ♂ pectoral and 2 ♂ red-backs - not enough Calidrine activity for much study. Collected 3 ♀ and 2 ♂ Red Phalaropes. (Ray's boy lost one of the ♂♂ while carrying them. Others - SM 496, 497, 498, 499.) Each of the ♀♀ has a well developed, shelled egg in the oviduct. One looked complete and ready to lay; others - spotting was underway, with ground cover complete. These were 2nd, 2nd, and 3rd eggs of clutches. ♂ was developing broodpatches - not quite complete. Red Phalarope habitat here looked about as at Barrow.

Returned to camp and processed

Maclean
1966

birds, then wrote notes.... and so to bed.

17 June — Meade River Coal Mine, Alaska

Up early to try my hand at blueberry pancakes. Modesty prevents my relating the results. After writing a few more notes, took to the field with Paul, this time on the village (North) side. Opportunity for good scientific B.S. as well as habitat study.

Saw turnstones in village, but they are limited to garbage dump, and are not of much use. Walked the low, marshy river terrace north of the village. Last August I had expected this to be prime habitat. My expectations were not exactly born out. In the 1 mile + of this marsh there were perhaps 8 pairs of semi-pds and 4 ♂ pectorals. Also saw 2 ♂ and 2 ♀ dowitchers (all separate encounters), and both Northern and Red Phalaropes. As Paul has said, the vegetation and land form here will make feeding observations on some species quite difficult. I did, however, emphacise (and

Maclean
1966

perhaps over-emphasise) the importance of continuing to concentrate on feeding observations. He has not bothered to take timed counts on <u>any</u> birds, and this disturbed me. The timed counts are important, and will be more important when the birds shift more towards surface feeding. I was able to demonstrate the importance on several birds we watched today, so hopefully he will start doing more timed observation counts.

Otherwise, a very pleasant morning. Wind now blowing pretty well, but warm. Walked to end of Village Flats (so named), then along sandy ridge to large lake, and across large, gently sloping <u>Eriophorum</u> - <u>Carex</u> meadow to camp. This latter looks like Red-back area, and Paul says they are as dense here as anywhere. That was not too dense - perhaps 1 pr. per 400 m. of walking.

Photographed long-tail jaegers, then returned to camp for lunch. Used the quiet part of the afternoon for an hour of sleep, then took

Maclean
1966

for partially drained lake basin behind (West of) camp. Circled in counter clockwise. Paul took feeding observations - and I think he surprised himself at how many he got. I took pictures and participated in feeding observations. Got some (I hope) good pictures of a ♂ Willow Ptarmigan and some habitat shots; later some pictures of the Parasitic Jaegers. Also got 2 timings of a Western Sandpiper feeding on a snow-bank : 28 and 54±6. About 1 more day of this and the snow banks will be gone. This lake basin was again the best shorebird spot in the area, with all species somewhere near it. Separation again appears about as at Barrow, with greater physical habitat distinction allowing greater spatial separation of the birds.

Now - why are there fewer shore birds here than we might have hoped? One reason may be the preponderance of <u>Ericaceous</u> plants, which birds seem to avoid. Willows are not avoided, but the heaths are. Whether this is due to low insect

Maclean
1966

numbers or other reasons remains to be settled. Secondly - the ridges here are very sandy, almost lacking in graminiformes, and ~~upon~~ from several stare-tests, appear to be poor in insects. Thus, another large part of the area is non-productive habitat. The Eriophorum tussucks are impenetrable to shorebirds - another unutilizable portion of the habitat. (Unfortunately, Paul's census plot is mainly this kind of tundra, and densities are low. He, of course, has no control over this in setting up the plot in the snow.) Methinks - for the remaining utilizable tundra, densities are not at all low. Semi-pal are by far doing best. Pectorals don't approach a good Barrow year, but they certainly exceed a bad one (as 1966!). I think a thorough nest check in the lake basin area in addition to the census plot is called for. Enough philosophising for now.

After dinner went across and down stream with Paul, Ray Spalock, and Art McKee (C.R.R.E.L.) to collect. Landed ca. 1 mile down

Maclean
1966

in River terrace area that was, in land form, quite reminiscent of Bernard River, Banks Island, NWT, Canada. There semi-pals were down right DENSE, and Pectorals were better than the Camp side. Collected 5 semi-pals - all ♂♂ (SM 502-506): 4 had well developed brood patches - other partially developed. Looks like (1) they are about done laying; and (2) - there is a temporal pattern to incubation of the sexes. Also took 2 ♀ Northern Phalaropes for comparison of stomachs with Red Phalaropes, and a Pair of Red Phalaropes (SM 507, 508). Funny business going on in the Reds - ♀ has a regressed ovary and only 2 ruptured follicles evident (she was shot up - could have been more). ♂ has partially developed brood patch; testes shot up.

egg in — induct - 3rd clutch.

Surveyed bird populations there - found a 4 egg semipal nest; Ray found a pintail nest w/ 6 eggs; golden plovers acting like nest in the area. Came in and wrote notes to bed time.

Macken
1966

18 June

Meade River Coal Mine, Alaska

Good breakfast, then played with specimens and notes to get caught up. Went out to Paul's census plot to add another row, making it 6 x 6 : 80 meter squares. Addition includes some good wet pans and should be a help. Walked around and photographed before coming in for lunch. After lunch rang up ARL on the radio and had Ben call Max on the phone to see if we are getting a plane today. We aren't.

Weather now going bad - wind blowing a steady 10 mph from the NW, and temperature and barometer falling. Hope it doesn't go to pot.

Tried fitfully to sleep a while, then gave up and went out to collect feeding observations. Walked around large lake basin west of camp and collected observations on Northern and Red Phalarope, dowitchers, pectoral, western, and semi-palmated sandpiper. Found Paul's ptarmigan nest - now 8 eggs - and another ptarmigan just west of his census plot. By this time it was darn cold! Wind up to 13-15 mph, and

Maclean
1966

a bit unpleasant. Was happy to come in and cook dinner.

Afterwards, went downstream in the boat with Ray, Phil Johnson, and Roger Burnard (with Phil's project). Phil wanted to look at the dunes; Roger is an interested bird watcher; Ray is an interested duck eater. Went to the large dunes below (N. of) Village flats, about 2 miles from camp. Arctic loons and old squaws in the small melted portion of the large lake. Tundra here was the upland tussock variety, dotted with ponds. Collected a ♂ semi-pal (SM 509) feeding actively along lake margin. Brood patches only partially developed. Also took a pair of Red Phalaropes (SM 510, 511) - ♀ laid an egg on the spot (shell just beginning. Heard 1 ♂ Pectoral Sandpiper - otherwise, not much. It is quite obvious that red-backs are too scarce for any real use. Wish I could use a sub-surface feeder for stomach content comparisons. I would like to know when the shift to surface-active insects occurs, in light of the fact that Meade River phenology is <u>not</u> advanced over Barrow

Maclean
1966

Spent some time with Phil looking at the dunes. They are obviously very active; could see blow-outs in all stages of stabilization, places where dunes were covering tundra vegetation, buried soil horizons — all sorts of interesting things. By this time it was raining, and pretty cold and windy, so in we came. Spent the rest of the evening on notes and bird bodies, and talking with Phil.

19 June — Meade River Coal Mine to Barrow, Alaska

Blueberry pancakes — a good way to start any day. Went downstream with Ray, dropping trash enroute. Stopped on East side of River, beyond spot of evening of 17th. Same river terrace topography. Semi-pals in area, but not as conspicuous as 17th — may be part of diurnal pattern. Black-bellied plover pair on ridge gave v. good distraction display when we were >150 m. away! Two prs. yellow wagtails and several singing ♂ Savannah Sparrows also seen. Collected several old squaws for Ray's family and looked at old sod houses on dry terrace, then headed back to be in camp for 1:30 P.M. radio contact.

Maclean
1966

the usual vague ARR story, but finally learned that a plane would stop by on the way back from Cape Thompson. that limited the afternoon to the immediate vicinity. Went out and staked yesterday's Ptarmigan nest. ♀ has completed molt in anterior end, but posterior 1/3, including retrices, is still white. Interesting - one would expect closer coordination between molt and reproductive cycle.

Went over to Paul's census plot and walked around, then spent a frustrating hour trying to collect the banded ♀ wagtail. Every time a bird got close, we couldn't tell if it was banded. Finally gave in and came in to prepare for departure. Plane, with Guy Shepard, arrived at 6:15, and we arrived in Barrow about 7:00.

On the return flight - ground was ca. 98% snow free, and only larger lakes have much ice. the water has noticeably disappeared. Utqiavik appears ready to go - have to get down there soon. Saw no jaegers or owls on the way in.

Meade
1966

took a welcome shower and grabbed a quick meal, then went into town. took a walk with my field assistant down Browerville Ridge to canal in village ridge, then S, along canal. Still much Semi-pal and Baird's activity - chasing and displaying. Heard 2 red-back trills, but no full display. Not a pectoral - heard or seen. Did hear Savannah Sparrow in full song, and saw 2 birds. Maybe they'll nest - worth checking later.

Few more random thoughts about Meade River: (1) It is a heck of a good camp, and a good place to spend a summer; (2) the place really burst forth in bloom in the time I was there. Two spp. of Ranunculus, Pedicularis, Arctostaphylos - as well as several Salixes, Eriophorum, and a Carex came into flower, and green growth became evident. the bluffs, ridges, and dunes are noticeably green now. Enough - I'll think of more tomorrow.

20 June

Barrow, Alaska

Spent the morning with a late sleep, then rounding up some equipment and supplies requested by Meade River boys and looking at stomachs

Maclean
1966

collected while I was away. Included was a ♀ C. melanotos × C. fuscicollis. Interesting looking beast, showing characteristics of both spp.

After lunch went out to Voth Area with Pitelka and Niko. ♀ hybrid has layed at least 2 eggs, and they wanted to search systematically for the nest (Probable paternity a ♂ pectoral). They gave it a good effort, but failed. I went West, towards pond area and Village Ridge. Found and staked a golden Plover nest (# 2-4 eggs) that had given me trouble before, then took feeding observations. Found a group of 6 red-backs - both ♂♂ and ♀♀, but too much going on at the time for an accurate count. It is early for this sort of thing. Phalaropes - pairs still frequent, at least in this area. This won't be a big year, but there will be nests around. Two were found while I was gone. Searched all afternoon, and finally found 1 pair of pectorals - ever got two feeding observations on the ♀. Semi-pals were quite active. Saw 2 chases involving 4 birds, and frequent displays. Birds have remained active for a long period now - possibly a function

Maclean
1966

of high population density. Took 8 soil cores for Berlese extraction - hopefully obtaining beasts for caloric determination. Returned to camp and started these in funnels, then drank a beer before dinner.

After evening repast finished up stomachs, then went out to Gasline Ridge with Tom Cutler, our lemming trapper. Found a red-back nest 6 feet West of I - 0.8 ; a pre-staked nest. Saw a good chase of 2 ♂ Pectorals after a ♀. Heard ♂ Dowitcher displaying, and saw 3 birds flying. Also saw a Dowitcher flying over Drum area.

Walked down to pond area South of ridge, but no phalaropes - in fact, not much anything. Took 12 more sod samples, then returned and dropped these into Berlese's. Spent rest of evening on notes and reading.

21 June Barrow, Alaska

Made it up for breakfast, but also made it back to the rack for a few more. Spent the rest of the morning and early afternoon on stomachs, weasel problems, and preparing the vacuum insect sampler for use. The old collecting

Maehan
1966

system was the weak point, so designed a new one using an external net bag invaginated into the hose by suction, but held in place by collar larger than collecting aperture:

Got some mosquito netting and cloth to have it made.

Spent the rest of the afternoon in Upper Voth Area (across the creek, along gasline road). Slow, very slow. Watched a pair of golden plovers. Saw 4 ♀ phalaropes flying together, and other loose groups of ♀♀ only. Thought I - they're done laying and flocking preparatory to departure. Killed 2 - both with egg in oviduct. Guess I was wrong.

Looked specifically for pectorals, and saw 4 ♂♂ and 1 ♀. Sex ratio has been skewed all along. Peculiar. Not much else in the area - pair of turnstones, 1 ♂ pus. Saw some Eskimo kids (a Brower, a Toovak, and 3 unknowns), and ended up giving them a science lesson with a ♀ Phalarope (4th egg

Macken
1966

in oviduct) and ♀ Lemmus (looked like resorbed or aborted embryos - 2/2) they had caught. Kept the stomach from the phalarope, too. Finally came in after 6:00.

In the evening went into town to have Maria Ahgeak make 2 insect collecting bags for vacuum. Beautiful warm, calm night - the once a year variety. But wind the wind stops at Barrow - something is coming. Stayed too late, then fell into the rack.

22 June Barrow, Alaska

Got 3 sack lunches and headed for the interior with Niko and Tom. Weather is cold and windy. Drove directly to North end of Ikroavik via Footprint lake for first stop, then on to Holmes' plot. Dead! Shorebird activity was very bad. Saw 4 ♂♂ + 1 ♀ Pectorals below plot and a few red-backs on the plot in walking the entire length. Both species were displaying sporadically - low intensity interactions in pectorals. Walked back to N. end of plot closer to lake and collected a few observations, a few red-backs, and a red-back nest.

Machean
1966

Collected them all. Drove on a bit, ate lunch, then drove some more. Discouraging - there is just not much down there. No Baird's, 1 semi-pal, very few plovers and turnstones, occasional Phalaropes. Collected a few feeding observations, and found but more nest - a 2 egg phalarope, ♂ in attendance, on South footprint lake. Collected 9 birds, then came on in.

After dinner lay down for a while which stretched out, then began work on today's stomachs while my laundry was washing and drying. Finally quit early on:

June 23 Barrow, Alaska

Weather worse. Spent the morning working on yesterday's stomachs. There are some good ones, including a phalarope with 339 Chironomid larvae, and several new unidentifieds. In the afternoon gave up on waiting for the weather to improve; packed up the weasel with the vacuum insect sampler and headed for Voth Area. And the weather got worse. Charged up the motor and played around with the device - trying to manipulate

Maclean
1966

it on my back. Finally - inspiration struck. Why bother with it on the back, anyway? Put it down - sample a few areas - then move a few feet and sample again. There is no real reason for widely separated samples. Took one bag full - then gave up as rain, sleet, and hail were falling and came in.

Evening weather too rotten for productive field work, so went into town to see about more collecting bags. The seamstress went to the movie, so ended up playing "Snerts" and eating berry pie.

24 June

Barrow, Alaska

Forgot to mention - yesterday Max wanted me to fly to Driftwood Camp, on the Utakok. Couldn't see much, so I turned the trip down. Good thing - they had to turn back anyway. This morning there was a trip to Bettles, but again, because of weather, it wasn't worth going along. Finally finished up the Eskowik stomachs, then started playing with Berlese extractions. This will be a slow and tedious process - and not

Maclean
1966

worthwhile for collembolans. Wonder if you can culture collembolans.... Wrote notes until lunch.

Afterwards drove out to Central Marsh road with Niko and Tom. Stopped by Pitelka's Plot and walked across Plot and Holmes' Morass to Elson Lagoon, down lagoon to Wohlslag Slough, and up slough to Beach Ridge. Weather cold and windy, with occasional wet mist. Fair feeding activity, but birds were hard to approach. Watched 3 ♂♂ pectorals in Morass - very a sign of breeding activity. Turnstone nests 1, 2, & 3 all O.K. - found no new nests. Saw copulating pair of golden plovers, and loose group of four of same, all in good plumage. Pair of Baird's along Wohlslag slough acted like clutch not complete; ♂ gave good ground display.

After dinner went in to town for Nalagatuk. Very enjoyable evening. Arrived home late and tired.

25 June

Barrow, Alaska

Missed breakfast, but I didn't sleep as late as I would have liked to! Walked out through Drum area

Maclean
1966

with Niko. Much territorial behavior in baird's and semi-pals. Found two baird's nests that Niko had localized and a sanderling! Weather was cold, wet, and windy; didn't mind at all coming in for lunch.

After lunch and a nap, went out through drum area again with Tom. Activity as before. Found 2 baird's nests here, and 1 in beach ridge polygons, and localized several others. These, plus one Niko found this afternoon, makes 6 today! Saw very quiet group of 3 pectorals, and only 1 red-back. The close arm of beach ridge is very quiet - couldn't scare up the pairs that were earlier localized. Collected a very few feeding observations before coming in at 6:15.

After evening repast went out toward Voth Area. Dropped Niko off in Britton's area to look for turnstone nests. Ran traplines 3a-3b with Tom with zero results in each line. Much semi-pal activity in Voth Area. Saw one good ground courtship - both wings raised, tail cocked, body horizontal, which resolved into

Maclean
1966

a wild courtship flight. Other birds displaying and chasing – a lot of activity for 25 June.

Crossed Voth Creek planning to do some collecting. Got simultaneous feeding observations on red-back, turnstone, and pectoral but decided to go farther to collect. Actually heard ♂ pectoral hoot twice – a rare sound of late. Got into collecting territory, and found nothing! Searched both sides of gasline road, then good marsh east of footprint lake without seeing a Calidrine. Two pairs of golden plovers and 3 ♀ red-phalaropes! On return observed a red-back and chased a ♂ pectoral – probably the one seen before – without success. Finally gave up and came in, picking up Niko en route.

Snow fell nearly continuously, if lightly, this evening. 3rd successive day we've had some snow. This could be related to poor activity this evening.

26 June <u>Barrow, Alaska</u>

Spent morning on some much needed catching up with notes, and even, in a moment of foolish exhuberance,

Macheson
1966

put up a skin. Afterwards drove out Gaswell road with Tom. Weather still brisk and windy. Stopped at N. end of Footprint Lake and walked area West of road. Saw exactly 1 red-back ♂ and a pair of golden plovers. Drove out East of Lake and finally found a lone ♂ pectoral. He flew East, then his or another ♂ harassed a ♀ steadily for at least 15 minutes. Couldn't collect anything, so drove in. Found Niko watching a curlew sandpiper feeding v. rapidly on East side of north road, across from Cake Eater. Finally flew West and just kept going.

Grabbed a quick shower and meal, then went into town for the evening.

27 June

Barrow, Alaska

Weather improving rapidly - the sun is out and the wind is reduced. Went out to (AACS) trap lines 9 + 10 with Pitelka and Tom, then wandered from there to Gasline Ridge while they set traps. Got a few feeding observations, but we're reaching the time of year when we have to work for them. Saw one burst of semi-pal display, and one ♂ red back that was a little worked up over something. There are

Maclean
1966

now, I think, 3 pairs of golden plovers in polygons between family lagoon and micro-mer. Population of these has picked up markedly of late. Nikos found one of these nests. Found an (I think) Old Squaw nest – only 7 eggs, tho. Bird flew up in my face, then low over ground and disappeared over rim of Honeybucket Lagoon.

After lunch went out to West end of Beach Ridge West of Micro-Mer to set out Tangle foot traps – strips of masonite 10cm x 100cm – covered with sticky resin and set into soil even with surface, then covered with "quonset" of chicken wire for protection. Hopefully, surface active insects will walk onto the surface so that we can obtain relative numbers by harvesting these traps. Set out 3 in meadow tundra and 3 on drier ridge tundra.

As we were doing this Weaver came over to Kibbitz, and reported a 1 egg nest he had scared up on the way. Went to check it – a baird's, it is. Then found a 2 egg baird's nest 40m. from that. Also staked a completed golden plover nest and a 1 egg

Machesn
1966

longspur nest behind micro-met. Came in for dinner, picking up Niko en route. Spent the evening at the second Nalakatuk, for Don Nusunginya's crew. Stubbed my toe on the blanket!

28 June Barrow, Alaska

Rainy, dark weather all day. Yesterday the wind turned through 270° - ample warning that something was coming. This, plus my stubbed toe, led me to spend the day catching up on notes and stomachs and reading.

29 June Barrow, Alaska

Awoke to clearing weather, and by mid-morning it was clear and warm. Rested my bum foot in the morning, then took off for high area SW of Barrow Village. Picked up Edna en route. First stop was ca. 2 miles from village, at outer edge of trash roding. Turnstones ~~were~~ were frequent here around scattered drums, but became much less frequent as we left the drums. Saw a good chase of 4 ♂ pectorals here, and 2 displaying ♂♂ 1/2 mile farther. This was the last of the species. Beyond the trash area the ground becomes strikingly consistent - well drained,

Macleod
1966

rolling uplands interrupted by broad, shallow swales of lush Carex. The upland vegetation resembles the ridges around camp - willows, scattered grass and sedge clumps, much Pedicularus - all in mounds. The uplands did not support much bird life - occasional golden plovers and baird's sandpipers. Semi-pals were frequent along the banks of Nunivak Slough and its tributaries. Each swale supported one and occasionally two pairs of red-backs. Found two red-back nests in swales - 4 eggs each. Saw group of 7 black brant in the slough going out; coming back saw 3 and killed 2 for Edna's family.

Heard knots overhead on two occasions. They may well be breeding there, however there is much territory to cover to find a nest. Also saw a group of 4 Dowitchers - surely ff completed somewhere or non-breeders, as there is no Dowitcher habitat in the area.

Spent the afternoon just

Maclean
1966

exploring, looking, taking a few feeding observations — even caught one bumblebee for Hurd. Fog came in in the evening and knocked visibility way down so we came in. Stopped to let off Edna and have some tea, then came in.

30 June

Barrow, Alaska

Pitelka's Departure Day. Spent the morning around the lab for last minute instructions, discussion, etc.. After lunch went out with entire crew to check tanglefoot traps — they are doing great, so we'll continue these and add another series of 6. Niko then took off on his own while the remaining 3 walked through Micro-Mer marsh towards Drum area. The fog was rapidly closing in, making visibility poor. Found no pectorals, and not much of anything else. After a bit of searching located the sanderling nest with ♀ sitting very tightly. Rewarded her efforts by leaving her undisturbed, and returned to Wedelo. On the way verified Weaver's unfortunate report that hairo nests by Micro-Mer have been lost to jaeger predation. This could

Machen
1966

be a very bad year for this. there are many marauding parasitic jaegers in the area, hunting constantly.

After more discussion and packing Pitelka left for a pre-departure cocktail party at Brewer's that must have been a gem!

After dinner Niko stayed into write notes while I drove out to traplines V + VI with tom. Rain which began about 7:30 refused to let up - large, annoying raindrops. Looked for feeding activity in the vicinity of the traplines with little success, then checked pectorals in central marsh and came in.

Forgot to mention - yesterday flying insects first became conspicuous on the tundra, and they continued today even in poor weather. Mostly Chironomids, although Muscids and mosquitos were also seen. these were seen stuck in the tanglefoot traps. Wish we had gotten those out about a week earlier... But hindsight is cheap!

1 July

Barrow, Alaska

Out early to traplines V and VI. Tom checked these while Niko and I looked for birds. Pectorals which

Machen
1966

have been in area are now partly at edge of Central Marsh and partly near SE corner of Pitelka's Plot. Collected 2 - one w/ greatly regressed testis, other going down. No action from these fellows. Also a flock of golden plovers in the area - at least 10. Could not get close to these. Niko and I each found a Golden Plover nest - 4 and 3 eggs.

After looking around that area crossed Wohlslag Slough and drove to ridge there. Old fox den at corner of ridge is now occupied by 3-legs (red fox) and at least (and probably only) one young. Got a good look at both of these, but no camera. Drove along edge of ridge toward Lagoon, then stopped and walked. Shorebird activity low. Shot a ♂ and ♀ phalarope (not paired). Saw a few red-backs and a pair of plovers in walking around largest lake. 2 egg loon nest by SE corner of lake - neither adult in sight. Finally quit and came in, picking up Niko en route. He reported similar success there.

After lunch checked w/ John

Macheson
1966

Beck regarding new masonite strips for tanglefoot traps - without success. Went out to Voth Area - tom set lines IV A-B while Niko and I walked to the west. Weather cold and windy, and bird activity again very bad. Saw a ♀ Steller's Eider settle onto a nest. ♂ was still nearby - must be just completing the clutch. She sat tight - would not flush when we walked around the area.

Crossed Village ridge to Village Lagoon. Finally found 4 semi-pals and 2 quiet ♂ pectorals. Semi-pals were a little worked up - probably extra birds intruding on a settled pair. Collected a ♀ phalarope and a ♂ pectoral on the way back to the weasel, then drove in.

In the evening worked on today's specimens and notes, then walked into town.

2 July

Barrow, Alaska

Up early and drove out to Voth Area with Jackie Campbell - Univ. of Hawaii entomologist - to move her wino nets. These had been set in Britton's Area, with prevailing

Maclean
1966

winds blowing over So. Salt Lagoon (W.) and Family Lagoon and Voth Road (E.). I convinced her (easy to do - she was looking for encouragement) to move nests ca. <1 mile farther up the Voth Road, to a moderately polygonal area where wind blows across fresh tundra. this means dis- and reassembling the nest frame, but this was not much of a problem. New area has several nests to be found; marked a 4 egg long spur for her to check, semi-pal around nests was scolding us, baird's farther down the polygons. Good area - hope she appreciates it.

Watched birds for a while, then returned, ate, and sacked out for a while. then, finally, picked up masonite strips and went out to change strips in tanglefoot traps. A cold, strong wind was blowing, making job a bit difficult. Tanglefoot would not squeeze out of the tube when cold, and my hands were not at their functional best. Next time - prepare the strips <u>before</u> going out.

After dinner wrote notes and

Machesn
1966

played with the strips a while. Counting Collembolans is going to be a real problem. Went over to Duck Camp to get Edna, then spent the evening at a party in the arch rec room. good, lively party. took her home too late.

3 July

Barrow, Alaska

Slept late — late in deed. Tried all kinds of approaches to the matter of counting and sub-sampling tanglefoot strips. Finally decided to estimate Collembolans and count everything else, and did so for these strips. I would rather use time on counting flying insects on another set of strips than playing with darn Collembolans.

Next finished up all stomachs lying around the place and washed used masonite strips. this turned out to be the biggest problem of the whole deal.

Ate an early Sunday dinner, then went over to the tundra with Niko. Left him on Pitelka's Plot, then went on to South End of plot and started walking. Carried the shot gun, but nothing close would feed. Weather cool, windy, and foggy.

Maclean
1966

Walked along East edge of P's plot and saw loose flock of ca. 20 Pectorals. Nothing in main part of Holmes' Marsh, then more pectorals (ca. 50) and a flock of Golden Plovers (ca. 25) along Elson Lagoon. Flock of pectorals also included 2 red-backs and 2 semi-pals.

Discovered turnstone nests #1, 2, and 3 hatched or hatching; #~~1~~ 2 + ~~2~~ 3 cups empty and birds nearby, #1 ~~3~~ - 2 young out, 1 pipping, 1 not yet started. Characterized nest habitats for these.

Watched pectorals, plovers, and flocking ♀ red phalaropes in Marsh, then met Niko at CRREL Wanigan and drove in.

4 July

Barrow, Alaska

Up for early breakfast, then out to Central Marsh with Tom. Weather rapidly clearing. Parked by Wohlsag Crossing and walked along East bank of Central Marsh Creek. For about ½ mile - not a single shorebird, then located flock of at least 60 pectorals feeding in marsh. Took feeding observations and watched style as much as grass permitted, then collected 5 birds. Returned as late

Maclean
1966

as possible for lunch, then processed specimens. Saved heads for later neurological work - 1/2 in formalin; 1/2 in Bouin's (to be switched to 70% EtOH).

Spent late afternoon and evening in town for 4th of July celebration. Tremendous. Races and games in the afternoon. After Dinner at Edna's - ballgame between village and camp, then tug-of-wars between marrieds and singles. It all ended in a gigantic free-for-all soccer game between the marrieds and the singles. Arrived home pretty darn tired and spent the morning of

5 July <u>Barrow, Alaska</u>

sleeping! Looked at yesterday's stomachs, then went out to the field with Tom. He set traplines VII and VIII in Central Marsh while I wandered in vicinity of Holmes' Morass. Cold wind was a-blowin, and activity was low. Walked to CREEL wanigan, then East 11 Wahlsag Slough. Found another bird nest (4 eggs) W. of Lewellyn's Weir. Collected feeding observations on several species including a super-cooperative red-back, then returned to Beach Ridge

Meehan
1966

across Holmes' Marsh. Collected a ♀ pectoral from a group of 5 - brood patches refeathering - and 2 ♀ phalaropes from a group of 5. Pectorals and phalaropes were conspicuous in Marsh in flexible groups.

Met Tom on the ridge and drove in long enough to grease up a replacement set of tanglefoot traps. Took Jim Gessman along when we (Tom and I) went out to make the switch. I can see that a carrying rack is needed to prevent many trips between the wedge and the trap locations. Caught adult crane flies this time, as well as feathers of a juvenile longspur. Looked around local tundra with Gessman, then came in for dinner.

In the evening Niko and Tom went to the movie while I lay down for a few minutes ..... and woke up at 11:00 P.M.. Then did laundry and wrote notes until late rack time.

6 July

Barrow, Alaska

Counted tanglefoot traps in the morning while Niko and Tom went out to traplines, then wrote June Progress Report. Had to wait for

Maclean
1966

a call from Brina Kessel, U. of A. After lunch took weasel into Browerville to pick up her and her sister, and returned them to the lab. She is expanding the central Alaskan bird guide to include Nome, Kotzebue, and Barrow and wanted information as to what can be seen here. Gave her one of Pitelka's maps and discussed local avifauna, then went out to ACS area to look around. Found a burst of semi-pal activity just W. of pipeline - probably non- or unsuccessful breeders beginning to congegate. Much incomplete display and one ground distraction display, but no territorial aggression among 6 birds in area of <1 acre. Continued along polygonal area looking at baird's, semi-pals, and turnstones. ♀ sanderling still incubating, as was turnstone #4. Walked up to micro-met but could not scare up any red-backs. All in all, I don't think she was too impressed by the Barrow bird life. I suggested that she include Browerville and Village Ridge areas as the recommended bird walk, as far as people care

MacLean
1966

to go, and after this "you're on your own".

Returned to camp and could not start truck, so had to use the weasel again to take them into town. The tour bus had already gone to the airport so took the weasel all the way to the waiting C-46.

By this time it was foggy and raining steadily. I had missed dinner at camp by several hours, so stopped by at Edna's and let her and Eunice Brower take me to dinner at Al's Cafe before returning to camp.

Since I had kept weasel, went out and checked traplines VII and VIII - nothing but rain-tripped traps. Returned to a warm bed.

7 July

Barrow, Alaska

Weather foggier and rainier. First weasel had a separated track, so got another and Tom left for the traplines. He was a long time in returning, and then brought word that this weasel had quit on him. Went out to check it, and found it non-functional. Reported

Macleod
1966

this to Kenny – two in one day. Went to Beck's shop next to raise hell about chicken wire and finally got some action on that.

Had to spend most of the dam afternoon waiting on a weasel so that Tom could run his traplines. Finally, after much aggravating B.S. – we're back to 584, which is the one Tom left ~~at~~ out by traplines V + VI on Sunday. Gummed up 6 new tanglefoot slats, and after dinner went out to place them. Put them in pairs, oriented perpendicularly 2 on Pitelka's Plot – ridge top, 2 in ridge swale, and 2 on Central Marsh. Central Marsh slats were accumulating animals as soon as they were placed in the ground.

Fog and rain tried to clear early in the evening, but gave up the attempt and rolled in worse than ever. Finished laying the slats at 9:30 and came in to write notes and prepare for a clear, sunny day tomorrow.

8 July

Barrow, Alaska

Got – amazing – an 8:00 A.M. start with Tom and Niko headed for repeat look at area SW of Barrow Village.

Macken
1966

Weather looked like it might clear, and soon did leaving a beautiful day - moderate wind, bright sun, etc.. The adult Diptera were flying in force all day. Went beyond village dump to area where first large tributary meets Niniuk Slough to make first stop. Stopped in the middle of a burst of semi-pal activity similar to that seen Wednesday with Dr. Kessel. Collected four birds. Also a pair of red-backs - probably with young, in the area. Bumble bees and adult Tipulids were evident. Failed to catch any bees, but began a tipulid collection for caloric determination. Spent time photographing flowers, of which there are more in bloom than near camp - 2 spp. Draba, 2 spp. Saxifraga, Papaver, 2 spp. Pedicularis, 2 spp. Ranunculus, Potentilla, and more. Followed slough, as before, to assure a landmark as we drove further. Made a short stop, then a major stop about 7 miles from Barrow. There saw and collected a ♂ white-rump. Niko found a remarkable concentration of collembolans resulting

Mackean
1966

from wind eddies on a small pool, so I collected enough to ½ fill a 4 dram vial to use in caloric determinations.

Niko and I walked ~~[illegible]~~ about a mile up a drainage system, mainly backing in it all. Looked at flowers and birds, collected 3 large bumblebees (probably all same species) feeding on Pedicularis lanata and loaded with yellow pollen. A loose association of 4 red-backs looked like early flocking activity. Saw several ♂ Stellar's Eiders - no ♀♀. No pectorals, very few phalaropes, no knot nests, only two pairs of Baird's.

Back at the weasel found a golden plover nest (4 eggs) and photographed the bird on and off the nest. Collected more Tipulids, then returned. Picked up a feeding ♂ pectoral and a ♂ lemming (!) from the village dump on the way in. The Lemmus was running across tundra fully exposed, and appeared lost. Eskimo kids were hunting lemmings 100m. away, and may have chased this one out of ~~[illegible]~~ it's home range. They were duly impressed when

Machan
1966

we caught it, since they were having little luck.

Drove back to Barrow for a late lunch, then gooped up 12 tanglefoot slats and headed out again. Dropped Niko by set I and changed these, then drove to set II and dropped off Tom to check traplines VII and VIII while I changed slats here to synchronize the two sets. It is obvious that the catch is increasing, indicating increased food availability. From the one day run on set II, it appears that they will be more productive.

Spent part of the evening processing today's specimens, then went into town.

9 July

Barrow, Alaska

Never two consecutive good days at Barrow. Rain, fog, cold and miserable.

Macleod
1966

13 July

Barrow, Alaska

Slept late to recover from last night's late trip to the tundra, then spent the rest of the morning trying to get a functional weasel. After lunch loaded the vacuum sampler into the weasel with Niko, Tom, and Jackie Campbell and drove out to Voth Area, near her wind nets. Stopped by well vegetated polygonal area and discovered Tipula carinifrons abundant on polygons. ♀♀ are wingless, and were quite conspicuous ovipositing on polygon slopes. ♂♂ (winged) tended to be more around polygon troughs - below ♀♀. Saw numerous pairs in copulation. Often a ♀♀ was surrounded by up to 6 or 7 ♂♂, frequently copulating w/ 1. Other ♀♀ were solitary. [see sp. accounts]

Spent much time crawling after various insects. Wind stopped around this time and mosquitos came out in force. Most abundant I have seen at Barrow, but far below inland sites. Tried the vacuum sampler without too much success. The engine kept quitting, and it didn't seem to be getting very much. Finally

Mochea
1966

it quit altogether and we came in and left it with Kenny Toovak for repair. Put the samples, such as they are, in Berlese funnels, then went to dinner. Spent the evening in Barrow.

14 July

Barrow, Alaska

Heavy rain this morning. This is shaping up as a good wet year. The tundra is very wet, and also quite green. Don't know if there is a connection.

In the afternoon went out to AACS area. Tom set traplines VII and VIII while Niko and I chased the knot with young that he had found last night. Found it and got some pictures which could be sensational. Walked around some looking at flowers. This is definitely a good flower year - many species are blooming in large patches. Again - don't know what connections are to be made.

Walked up to Tanglefoot #I and met Tom with the vessel. Changed these slats. Near Micro-met tower noticed Pedicia hawai ♂♂ abundant in wet marsh along road, and made a collection. ♀♀ were much less

Machesa
1966

conspicuous.

After an hour or so drove on to Tanglefoot II. Dropped Niko off by P's Plot en route. Changed slats, then picked up Niko on the way back in for late dinner.

After evening repast went out to try for more Pedicia, but weather has turned bum - cold and foggy - and the beasts were not to be seen. Searched until my back gave out, then came in with little to show for the effort.

15 July

Barrow, Alaska

Weather better. Spend the early morning counting yesterday's tanglefoot strips. They are really covered this time, and counting is a slow process. After a while showered and drove in to town with Merle Solomon to observe Edna and her "Head Start" class. A lot of fun - good kids. After school walked out onto the tundra East of the village airstrip. There is a surprising amount of good undisturbed tundra here. I guess eventually people will be forced to start building houses here. Mostly old (well vegetated) polygonal ground - right

Macken
1966

now quite wet in the troughs. Tipula were common, but the other crane flies were rare. Most of Tipulas were ovipositing. Eggs, once deposited, were not externally evident. Despite food source birds were not much in evidence here.

Ate dinner at Algecks. Bought a ♂ Spectacled Eider from Maxie. After dinner saw Charlie off at the airport, then went to "Miss Barrow" contest and dance.

16 July

Barrow, Alaska

Rain fell all night and most of the morning, adding still more water to the soggy tundra. Slept through breakfast, then struggled through tanglefoot strips. Over 1,000 small adult Diptera on several strips.

After lunch went out to drum area with Niko and placed old bird carcasses to attract Carabids for caloric determinations. Spent the rest of the afternoon on bird stomachs. Traplines are doing well at producing birds this year - hope they keep it up.

In the evening went out to traplines I + II with Tom. While he

Machean
1966

picked up the lines I looked for Pedicia in the low flats North of the ridge. Not much success. Weather again could have been too cold, but it has me wondering what the life span of an adult tipulid really is. Although food can be very abundant, in bad weather food abundance suddenly drops dramatically. Enough to be critical? I don't know - I really don't think so. After a while gave up and walked area South of ridge. Saw only a pair of plovers. Then helped Tom pick up the rest of his traps and came in.

17 July

Barrow, Alaska

Up to count the rest of those darn tanglefoots, then cleaned our messy lab (especially my messy corner). Glued up another set of boards, then went to duck camp to pick up Edna and went out to change boards. Stopped off at pusillus nest #8 - bird still incubating. Changed tanglefoots in cold, strong wind - bird activity low. After changing site II drove across Wohlsleg Slough. Road is very

Macleod
1966

muddy and difficult travelling for weasel. Checked fox den - animals either abandoned or not home. Walked along ridge without seeing much, then turned towards home. Had to clean muck from weasel while Edna dug up flowers on the way back.

Went to the Sunday dinner and movie (my first of the year, and it wasn't worth it), then went out to check traplines V, VI, VII, + VIII. took Jr, Beverly, Seaman, Max, and Bobby along. Jun. alpina in VII, and 2 longspurs in VI. VII + VIII are very wet, and permafrost is deep. Excess water could → deeper active layer, ~~I~~ me paréel. Seems that way.

Drove Edna into town and picked up spectacles eider, then returned and worked on tanglefoot slats until 4:00 A.M. to be ready for Meade trip tomorrow.

18 July

Barrow, Alaska

Missed breakfast. Packed for Meade, then talked with Niko about baird situation and decided to let the Meade go for a few days while we try to figure

Mochrdn
1966

out what is happening in bairdii. Spent the afternoon at a 3-hour nest watch and saw nothing - no nest reliefs or other baird's consistently in area. Shot 2 birds off nests - 1 ♂, 1 ♀. Hmmm.... so far, resembles tenuirki.

After dinner drove out to area of Lewellyn's wier. Dropped tom at lines VII + VIII on the way. Nest west of wier (#) was empty. Searched entire area for at least ½ mi. radius - found only 1 clutch of red phalaropes and evidence of turnstones - no baird's. Returned to nest and found 1 adult persistently by nest cup. Watched it > ½ hr. - nothing.

Walked with tom, who had joined us, towards Elson Lagoon while Niko continued watch of nest East of wier. Weather getting cold, with a good west wind. Not much activity. As usual, birds seen were too concerned over our presence to feed. Found baird nest # again - bird still sitting. Left it undisturbed and returned to the wier. Niko had seen no nest relief, etc., on his nest so we shot the bird - a ♂ - then drove in.

Paul DeBenedictus arrived at Barrow

Macleod
1966

from the Mesde. Spent some time talking over things there - all is well and processing normally. After midnight Niko checked nest #13 and found that a bird was sitting on it; no more temmincki. Went out and shot it - a ♂. Presumably the mate of the ♀ removed earlier. The other nest was vacant and cold. The best explanation may be long (ca. 12 hours) incubation sessions for each member of the pair, with the non-incubating bird leaving the area rather than standing sentry duty. This could be related to the exposed nest - a sentry bird attracts attention as well as alarms the other bird. The situation, however, is far from completely revealed.

19 July

Barrow, Alaska

Slept late, then spent morning sexing and looking at stomachs of yesterday's bairds' plus trapline bills. After lunch went out into Drum area in rainy, misty weather to look for baird's with young. The nest that Niko watched (#) has hatched out - 2 young still wet. Backed off and watched it for an hour - saw only 1 adult in the area in that time.

MacLean
1966

Continued on through Drum area without finding any baird's until trapline V. there there were too many birds to be absolutely sure. Collected 2 adults believed associating with the same clutch of young - 1 ♂ + 1 ♀. Took my eye off the juveniles to watch adults and could not relocate juveniles, damit.

Walked back through Drum area to return and found adult w/ 3 young on W. side of gasline. Collected it - a ♂.

Stomachs of juvenile baird's analyzed today contained crane fly eggs w/ no trace of adults. I'm more than sure the eggs were taken after they were oviposited by the ♀ tipulid. One stomach contained orange eggs - Prionocera? If the above is true, this follows.

this evening they threw a good movie at us - Cat Ballou. After this went out to traplines IV A-B with tom. Walked South while tom set the lines. Redbacks were frequent along Voth Creek - all giving the alarm. I suspect the young were in the tall, lush grass of the creek. Also saw a flock of at least 7 adult ♂ phalaropes were flying actively

Macleod
1966

over stream - possibly activated by passing parasitic jaegers. Saw a flock of 56-60 Long tailed Jaegers, and collected one. Returned to traplines to help Tom finish setting, then returned to the lab. Spent the rest of the ~~af~~ evening doing a live-mount of the jaeger. It's stomach, as those of the other jaegers I've seen, was jammed with tipulids.

The insect peak seems to be definitely passed. Even in good weather this evening, saw only a few Tipula. The Tipula flight seems to have been less decidedly peaked than Prionocera and Pedicia, which were very synchronous and short term. Makes one wonder about (1) timing and synchronization mechanisms; and (2) the life span of a single adult tipulid. Have been seeing dead tipulids - mostly ♀ Tipula and Prionocera - lying on the tundra.

20 July

Barrow, Alaska

In keeping with my screwed up circadian rhythmicity, worked late and slept late, thereby missing a much needed breakfast.

Maclean
1966

23 July

Barrow, Alaska to Meade River, Alaska

Got up feeling just a little foolish! Cleaned up around lab, put away insects, etc., then took camera out to Steller's Eider nest. As feared, she has hatched out and was not to be seen. Spent the rest of the morning turning over barrels and boards in the drum area in search of carabids. I must lack the technique, because I turned a lot of drums for 10 lousy carabids. Also found some staphylinids and 2 Tipula larvae.

Returned for lunch, then spoke to Dr. Brewer and was given notice for an afternoon flight to the Meade. This left the tanglefoots for Paul - but I'm supposed to be back for the next change. Threw my gear together and headed for the airport. Flew down with Guy Shepard in 467. Barrow was cloudy and foggy, and this held until just South of the Meade. There it was broken sky.

Stowed my gear and had a cup of coffee with Art McKee and Roger Burnard. They are holding the fort while Phil Johnson is away at meetings in

Macka
1966

Helsinki, and things seem to be going very well for their project. Went out with them to measure plants for growth increment and look for insects. Saw lots of mosquitos - not too much else. The skeeters, while not nearly as bad as Paul described, are certainly the dominant arthropods. Wonder how much they are utilized for food. Stomachs will soon reveal this.

Niko and Tom came up from North of the village - ecstatic about the place. Tom stayed to squash plants while Niko and I walked toward Parasitic Jaeger nest, stopping to look for bird food periodically. Aside from mosquitos, there's not too much. Saw zero tipulids. Jaegers were still there, reacting as before. Could not find young in deep grass, although we localized them using intensity of reaction of adults.

Walked back via Paul's census plot. A pair of black bellied plovers - very alarmed, were conspicuous in the center of it. Nearer camp a pair of golden plovers acted similarly. Not much else except wagtails and white-crowns.

Madsen
1966

Returned to cook Dinner - pork chops - then took off with Niko and Roger Burnard in clear weather. Made frequent stops to crawl around assessing insect situation. As before - not much. Even where a ♀ pectoral was seen feeding we could find only mosquitos. Skeeters on vegetation are easily caught - presumably by shorebirds as well - and may be the food right now. If so, the early part of the season is certainly limiting for breeding densities!

As we walked Duke, Guy Shepard's Dog, caught two <u>Lemmus</u> - a juv. or subadult and an adult. In neither location was sign evident. Both were in wet tussocky stuff. This stimulates use of hungry predators for kill out or measure of trapping efficiency.

More idle discussion - due to micro topographic and vegetation growth form complexity of Meade River, Tanglefoots would be difficult to use. Why not place slats vertically, ⊥ ground, and let things fly in that way? NEXT STEP - why not place the

Macleod
1966

long axis ⊥ ground to get a measure of flying insect stratification? (Don't know exactly what the latter is worth, but the thought is intriguing.) I may try these out at Barrow.

Continued walking to bench along edge of large lake N W of camp. Temperature dropping fast. By lake saw congregations of snail shells; others live and eggs in lake. Semipalmated sandpipers were feeding along lake edge on wet benches. Turned toward river and saw a ♀ pectoral acting "young-ish"; watched her with no results. Saw pair of golden plovers with one young. Sat and watched a pair of arctic loons in the low sun, then returned for a late snack and bed.

24 July

Meade River, Alaska

Up for a return to blueberry pancakes - delicious. Wrote yesterday's notes, then loaded the boat with cameras, bug nets, Off, Tom, Niko... and chugged up the river to first big bend to the East. Stopped on the camp side of the river and walked the bluff. Not too much shorebird activity - a few semi-pals. Red phalaropes,

Machan
1966

as yesterday, were surprisingly uncommon. Collected large bumblebees - mostly from Pedicularus capitata and Polygonum bistorta among willows along river bluff. Yellow wagtails were quite frequent. Mosquitos too. Walked a mile or so along bluff, then turned inland. Still not much in the way of shorebirds. took a refreshing swim in a large tundra pond. Back by river bluff found a small sandy pond filled with some sort of invertebrates - mostly copulating. Collected a vial full. Returned to boat, picking up several more bumblebees, including 2 different species, on the way.

Putted back to camp, snacked, then Niko and I tried for a short nap. Tom woke us up to report that village natives had seen caribou where we had been earlier, and were going up with rifles. We grabbed the camp boat and followed with camards. Our first estimates of the herd were ca. 250; our last estimate was 3 to 4,000! they were bedded down, but 2 hunters were behind to spook them towards the hunters. We didn't want to interfere

Machen
1966

with the hunt, and thus got no pictures. Frustrating to stand ~~[illegible]~~ by doing nothing. It was truly impressive when they were spooked and started running. I can't describe the many grunts, wheezes, hooves and misc. other noises. The hunters chased them back and forth for a while, firing madly into the mess. When the herd finally got away it went by camp and Roger Burnard got into the middle of it with his camera. He shot 4 rolls of film, so we may get a picture or two after all.

Spent the rest of the evening helping skin and haul caribous. Returned for a post-midnight dinner and the sack.

As we were watching the caribou herd we saw two parasitic jaegers team up to bring down a passerine - probably a longspur. Took about 1 minute of constant harassment in flight.

One of the freshly skinned caribou carcasses attracted several bumblebees - we collected 1 large and 3 smaller ones this way.

25 July

Meade River, Alaska

the final caribou fully was something

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untain
eep!

MacLean
1966

around 25 animals. 3 of the hunters flew back to Barrow, leaving a lot of wounded and unskinned animals. Burned us up. Spent the day skinning and hauling meat and knocking off cripples to keep them from going to waste. Had a heck of a time with one bull in a lake — always on the far side of the lake. Finally waded (chin high!) across to get him . . . and, the gun misfired. Got him eventually on our last shell. Turned out to be the best (fattest) animal of the whole lot.

Saw small flocks of semi-pals in wet tussocky marsh. Seemed to me non-breeders; I don't know about Paul's report of feeding flocks of breeding birds. Saw non-flying juvenile pectorals on two occasions in same wet tussock-carex marsh.

An ARL plane with Cliff Alderfer and Bob Lewellyn flew over in the morning and dropped a note saying they might return in the evening. They didn't.

Not much else - dinner of caribou steaks, dishes, and the rack.

Maehen
1966

26 July

Meade River to Barrow, Alaska

the ARL plane with Cliff Alperfer arrived soon after our late breakfast, while I was packing up. Didn't really want to leave the place - it is truly pleasant. took home some meat for Jimmy Leavitt's family, Ray Spalook, and the Ahgeaks.

Beautiful, clear flying weather. Saw another herd of 150-200 caribou on the North side of the Inaru. No owls - no pomerines. Saw flocking shorebirds - could not identify from the air. Ran into fog just S. of Barrow Village, and camp was cold + foggy.

Spent the afternoon counting tanglefeet that Paul changed - catch is way down. Tipulids have nearly dropped out entirely. Cleaned and re-glued the slats, then went out to change them. Did not see much bird activity - flock of golden plovers on the North edge of Central Marsh - but it was too late to spend much time. Came in for a badly needed shower and meal, then went into town for the evening.

Macleen
1966

27 July

Barrow, Alaska

Spent most of the morning sleeping off the rest of my Meade River exhaustion - I was more tired than I had realized. Cleaned up the lab - which was left a mess (Paul must have gone to Cape Thompson in a hurry). After lunch counted and cleaned yesterday's tanglefeet. The catch is still declining. Next went into the Drum area to look for Carabids. The carcasses we put out produced a few, but it looks like a long haul to get the requisite gram dry weights.

In the evening went out for some collecting and just plain bird watching. Saw clutch of semipals and clutch of golden plovers in low polygons SW of Micro. Met. Probably should have collected a bird from each, but I didn't. Parked by gasline ridge and walked South. Activity low - collected 2 alpina, 2 red phalaropes, and a baird. Saw no juveniles, which I particularly wanted for stomachs.

Returned around midnight and went to Drum area to re-activate Kurt Bohnsack's old milk can pit-fall traps.

Macleod
1966

Found and turned 19 of them. Returned to camp for breakfast, then went back to lab and removed stomachs of this evening's shorebird collection, and finally rolled into the rack.

28 July

Barrow, Alaska

First check of pit-fall traps produced 3 carabids and 1 staphylinid — there is hope. It is time to start thinking about samples of Chironomid and Tipulid larvae, too.

Most of the afternoon was spent on yesterday's stomachs plus two trapline juveniles found in the icebox. The stomachs reflect the Diptera crash.

After checking the Drum area pit-falls went out to Beach Ridge to see if I could find any there. Searched through Bohnsack's forest of stakes without finding any. Spent an hour watching a pair of Baird's Sandpipers. Twice got good distraction displays around one spot, but found nothing there and birds refused to go back while I watched. Definitely two birds together.

Walked into town, then drove out (with truck mishap en route) to

Macken
1966

Barrik. Overcast evening, and Eider flight was slow. Saw 2 murres fly by headed South West over open water. Came in when the rain started and after a cup of hot tea headed for home.

29 July

Barrow, Alaska

Woke up to a rotten rainstorm. this, however, ended about 9:00. Checked the pitfalls - 1 lousy Cardin - then decided to take a chance and head inland. Weather tried to clear all day and almost made it.

Drove directly to Skroavik. Saw a clutch of 3 flightless juv. phalaropes on footprint lake. Area around Holmes Skroavik plot was almost deserted - 1 pr. golden plovers on the plot; nothing seen in wet stuff below. Just beyond the plot saw a group of 4 black-bellied plovers. Saw others in flight and occasionally on the ground.

Drove to the head of Sungoodak L. around 15 miles South. Lots of flowers and saw (but could not capture) 2 bumblebees. Shorebirds - except for red backs - were

Maclean
1966

poor! Saw a total of 6 clutches of red backs - all with juvs. just flying. Collected 2 adults and 2 young. Saw and collected 1 semi-pal. Not a single pectoral the whole trip! Phalaropes were flocking very actively. Collected 4 from a flying flock.

Spent much of the day turning drums for Carabids. Got a total of 77 - mostly from one set of ca. 15 drums. Why the congregation under these particular drums? I know not. They looked just like any others. I now have over 1/2 the needed 300 for 1 gm. dry weight (assuming Holmes' weights are correct).

By the time we got around to heading for home snow was falling, and for a while it remained on the ground. Cleared up some soon thereafter, however, and turned into a beautiful evening.

Was very much impressed by the floral volume and diversity below Ikroavik - far more than at Barrow. We walked along the North End of Sungoopak - only longspurs, but many different kinds of flowers.

Took Edna home around 11:30 -

Macleod
1966

just in time to get in on another abortive NASA rocket launch. Finally stumbled home around 1:30 A.M. and fell into the rack.

30 July

Barrow, Alaska

Up late. Glued up tanglefoots and went out for the change 1 day late. Lots of Muscids, but not much else. I would like to switch to 6 day periods, but the glue might change in stickiness and alter the results. Better stick to 3 days as much as possible. Checked pitfall traps for beetles - found only 1/4" of water from last night's and this morning's rain. The carcasses produced only 1, and turning drums 1 other.

Went to dinner at Brower's Cafe with Crystals - weather bureau people. Found out that this is within reach of being the wettest July on record.

31 July

Barrow, Alaska

1 Carabid in pitfall, but 7 on carcasses and 1 other under a board. Morning rain - beautiful afternoon - rain again all evening. After bug check wrote notes, then counted and cleaned tanglefoots. Ichneumonids

Machen
1966

appeared in good numbers - assuming I haven't been misidentifying them before. Very small - ca. 10 mm and less. At least 3 recognizeable species. Spent the rest of the day talking with Paul, back from Cape Thompson, and on some badly needed catching up on field notes. Finished day by removing stomachs from birds brought in Friday.

1 August

Barrow, Alaska

Cold rain all night long, and a mean looking morning, with intermittent rain.

[Interject: forgot to mention yesterday - in checking for Carabids saw a large number of Muscids - didn't look like Spilogona - fully ½ of those seen were copulating. More evidence of synchrony in Arctic insects.]

Finally got around to answering Brina Kessel and writing Pitelka, then wrote May and July Progress Reports. Somehow, that took up most of the morning.

This afternoon tried to see Brewer regarding personnel shift. Looked at stomachs while waiting. As usual -

Macheda
1966

didn't gain conference until after 5:00, and didn't learn much then. There is a chance for tomorrow.

Went out for a while into Drum area. Found 1 carabid and 2 staphylinids in pitfalls, but carcasses produced another 7 carabids.

After dinner went out toward gasline ridge in cold intermittent rain. Saw very little - a baird feeding along a pond edge, semipal w/ young and golden plover w/ young South of Micro-Met. Came in and wrote notes and looked at stomachs for the rest of the evening.

2 August

Barrow, Alaska

Went out in the morning to check pitfalls - 1 carabid - then continued on to area South of Imikpuk to roll barrels. Very poor return - rolled many barrels for two carabids.

After lunch glued up the tanglefoots and started out. S. of Imikpuk found a large flock of ca. 40 semi-pals, 3 baird's, 1 pectoral feeding along pond margin. Collected by 2 shots into dense parts - got 8 semi-pals — 7 immatures, 1 adult. All of stomachs contained [almost] exclusively Chironomid larvae. Returned

Machen
1966

these to lab, then went out again, past flock, to tanglefeet. Baird still giving alarm by site I. Boards were quite clean this time. No bird activity evident in Central Marsh.

In the evening walked out towards Birnirk, noting semi-pals along edge of Imikpuk and the ocean. Reversed directions and went towards town. Again saw semi-pals by puddles and outlets of lagoons, streams, etc. into ocean. No vegetation in any of feeding places.

3 August

Barrow, Alaska

Spent the morning counting tanglefoots and processing semi-pal stomachs. After lunch Dr. George West of Laboratory of Zoophysiology, U. of A., showed up with Gessaman and we (West and I) had a long conversation regarding calaric work, possibility of fat extractions, and more. It appears that the best time for a trip down there will be around 20-25 August. Then I can return here, accumulate more samples, etc, and stop off there for another day or so on the way south.

Mach Eda
1966

Tom arrives at Barrow from the Meade and we discussed Cape Thompson - specifically mouse trapping and mosquito ~~trapping~~ catching. I want to use mosquitos (as a readily available adult Dipteran) to test this discrepency between Holmes' and my own insect weights. Will test final weights (and caloric values ?) of samples treated with (following Holmes) 70 % ETOH, 10 % ETOH, direct oven dry, and (as U. of A. procedure) freeze dried.

After dinner dis a few more stomachs, then went to social gathering at Rita Horner's.

4 August

Barrow, Alaska to Cape Thompson, Alaska

Up for breakfast and lab cleaning, then rode into town with Riley to retrieve camera left there. After conference with Director loaded traps, cages, camera equpt. etc. on truck, thence to N 2146 Z, and after more delay took off with Joe Felder flying and Tom riding for Cape Thompson. Good visibility below Barrow to Brooks Range. Flew over Meade River camp, then to upper Noatak to drop supplies to U.S.G.S. there. Saw no owls or

Macleod
1966

pomerine jaegers.

Noatak camp was pleasant - in jungle of 15 to 20 ft. willows along large river gravel bar for landing strip. Saw tree swallows flying around camp, and brief glimpse of a warbler-ish beast. [Forgot - lots of caribous between Barrow and Meade River.]

Flew through rainstorms in Brooks Range, but broke into clear by Cape Thompson and landed in time for supper. Camp consists of cook-station leader Fidel Pampland, mechanic Jim Chrestman, handyman Rondo Brower, and a buggy U. of Hawaii insect collector, Ed Brown. Really a strange bunch - nobody talks, and rarely is anyone seen working.

After dinner set out foloing Sherman live traps - 20 on either side of camp. Mouse sign is general but not too intense - hard to tell in this vegetation. My guess is pre-high. Tom flushed a Microtus oeconomus, but we failed to catch it. Looks promising.

Next walked over Crowbill with Ron Brower, with Tom and Ed

Maclean
1966

Braun following. Went to second valley, then down to bird cliffs. Vegetation is very rich and still in good bloom - although getting to the later things (forget-me-not [= Myostis alpestris], Epilobium, some composites). Uplands has abundant water pipits - nothing else. Pipits were very vocal.

Bird cliffs were about as before, except kittiwakes are still on eggs and young chicks. Kittiwake nests are on lower half of the cliffs, on fairly substantial nests of grass. Not as close together as dense parts of Murre colonies, but still close and clumped in distribution. Found a black guillemot that came out of a narrow cave as if scared off a nest, but did not find nest. Did find a horned puffin nest ca. 30 feet up, in a cavity ca. 4 ft. deep. Too dark for pictures so went back over the mountain to camp. Checked traps - 1 mouse, then to bed.

5 August Cape Thompson to Barrow, Alaska

Up for breakfast and trap check - 4 more mice - then loaded boat on the vessel and drove

Maclean
1966

to the base of Crowbill. Rowed around the rocks, then beached the boat and walked up the beach (got soaked later trying to get around a rock.). Beautiful, sunny day. Concentrated on getting pictures, and spent most of the day climbing up cliffs and changing lenses. Took some pictures of Murres at <15 ft. w/ 2 extension rings + 300 mm. telefoto lens — just heads in the frame. Will be interesting. After near disaster on a cliff and again on a steep snow bank returned around Crowbill and stopped to photograph pair of red foxes near den. [Didn't mention this to others to protect animals from Max' cages.]

Back to camp for late lunch and trap check, then stayed by camp waiting for plane. It arrived after dinner with Felder flying and Niko riding shotgun. Time for a few words, then Felder and I were off for Barrow. Stopped by Meade River en route to pick up (U. of Hawaii bug-hunter) Jackie Campbell. Landed at Barrow under partial overcast and strong, cold East

Macleod
1966

wind. Time to eat and put mice away, then to bed.

6 August

Barrow, Alaska

Slept late, then ~~counted~~ prepared tanglefoots and loaded them into the vessel, which then declined to start. Got some help after lunch, and went out to make the change. Another decrease - there was not too much there. It is amazing how rapidly the decline took place. Things ~~should~~ still could pick up if the weather improves. This, however, brings up the question of how real the apparent mid-summer food abundance is if a spell of bad weather can knock the insects down like this. Secondly - in bad weather do the insects become entirely unavailable or are they just not flying, but still available on the surface. One possibility - wait for some bad weather, then kill a sample for stomach contents.

In this cool, windy weather bird activity was low. Saw a flock of 8 P.d. feeding along N. edge of Central Marsh.

Macleod
1966

Pitfall traps, in absence of checking, did very well - 5 Carabids and 6 Staphylinids. It is time to begin working intensively on insect collecting.

Spent evening in Barrow Village.

7 August

Barrow, Alaska

Spent the morning counting and cleaning yesterday's tangle feet strips. Weather worse than yesterday - cold and foggy, with intermittent rain. Caught up on notes from Thompson and mailed film, waiting for weather to improve. It didn't. Went out to pitfall traps and found water in the bottom of the cans, with one miserable floating carabid. Something - probably a local dog - has been removing our carcasses set out to attract beetles. Finally gave up and spent the evening cleaning lab, writing notes, and reading.

8 August

Barrow, Alaska

After a bad start weather finally began to improve. Drove out toward Voth Area and found ca. 60 phalaropes - ads. and immatures on ocean ~~to~~ and inlet at mouth of Family Lagoon. Some

Maclean
1966

birds were feeding along the gravel of the inlet, a smaller number along the ocean, spinning. Shot 3 birds - all full of marine organisms - mostly a small shrimp-like beast. After disturbance all went to ocean and stayed there.

Continued to Uath Area - found fog there and negligable bird activity.

Spoke with Max Brewer today, and found myself appointed speaker for Friday night's seminar. Spent the evening re-reading Holmes' and Pitelka's papers and organizing thoughts for that.

9 August

Barrow, Alaska

Checked stomachs on three immature birds (pectorals) collected 6 August, then read until lunch. After - checked Pitfalls - 1 Carabid, 1 Staphylinid - then went out to change tanglefoots. Found them way, way down - nearly bare. Bird activity was similarly poor - a flock of 7 golden plovers, 3 pectorals by tanglefoot I, and occasional Red-backs. Weather was again wet and cold. this may relate both to insects and birds.

Maclean
1966

19 August

Barrow, Alaska

Up early to run the traplines. Drove to Birnirk to pick up Edna, Max, Bobby, and Price Brower, then drove out to lines VII and VIII. Amazing-found 2 lemmings in VII, 3 longspurs in VIII. Another Lemmus in VI, plus 5 longspurs from the ridge lines. Longspur catch has been very high this run, and the birds are quite abundant.

Crossed Wohlslag Slough and drove out towards gaswell. Saw scattered pectorals and red-backs — mostly in groups of 2 to 5. Actually got a couple of feeding observations. Away from the immediate coast semi-pals are definitely not seen. They were abundant in brackish ponds at Birnirk, but none were seen inland.

On return trip along East edge of Holmes' Morass saw another group of pintails - 5 this time. They are exceedingly common this year. Also two groups of 5 and 7 Dowitchers. Weather was best in a long while, and I saw a good number of small muscid flies in the air. These were

Maclean
1966

much smaller than the ones I saw (1 Aug.) earlier by the pitfall traps. So is a surface food source later than most.

After lunch Tom went out to pull in two traplines. Niko and I went to our Chironomid pond - did well. Caught tom going back in and spent the rest of the afternoon and evening sorting and counting.

20 August

Barrow, Alaska

Another day devoted to 'picking worms' - we've got over 12,000 small ones now. There is no doubt that the small and large chironomids are stratigraphically distinct, and clearly separate semi-palms from pectorals and red-backs at this time. The latter two species are less easily (or less clearly) (or not!) separable.

In the evening a very dense fog came in, and Wien was unable to land.

21 August

Barrow, Alaska

Up early, and Niko and I went to church again with Eva's family. Niko spotted Janet Jeffers fresh off the morning Wien flight,

Maclean
1966

so after church we met her at the Top-of-the-world Hotel. Walked around town getting the tour from Bobby Algedk, then drove out to Birnirk. Saw a large number of turnstones, nearly in fall plumage along the beach and by brackish ponds at Birnirk. A moderate number of semi-pals and a few red-back immatures were at Birnirk. Still many Phalaropes along the ocean.

Ate a picnic lunch, then drove out to the tundra via U.S.C.+G.S. station. Papaver, surprisingly, was still in good bloom along the Beach Ridge. Managed to find red-backs, pectorals, golden-plovers, and a few Dowitchers out on the tundra. Drove to South side of Wohlsleg and walked a while, then returned. Ate a late dinner at Vinnell, then spent the evening in the lab talking, and finally drove the women home to Algedks, where I later spent the night.

22 August

Barrow, Alaska

Had a (surprisingly) early morning talk with the Director and

Maclean
1966

got Niko off for Meade River - ostensibly to help with departure, but actually more to see the fall colors.

Bummed a ride into town, and after Breakfast at Edna's, walked over to Browerville and our Browerville Ridge. Saw more Dowitchers than anything - some pectorals and red-backs. All were feeding in ± exposed pond bottom situations. Continued to Village Ridge, then to Voth Area, and eventually to camp. Saw one group of ca. 6 immature Golden Plovers in Voth Area. Tundra is still quite wet, with a surprising amount of green left in it.

Watched the Dowitchers feed - they were using about 1/2 of their bill length which places them below the feeding stratum of pectorals and red-backs - but probably same type of Chironomids were taken.

Bought some more ivory, etc. from Jolly Jack's Emporium, then went into Barrow, had some of Beverly's Caribou stew, and delivered Janet to Wien tour bus. Relief! Spent the evening celebrating.

Maclean
1966

23 August

Barrow, Alaska

Loaded the vessel for a full day trip, then drove into town with Tom to pick up Edna and Eunice. After stop along beach for sling-shot ammunition, drove out Gasline Road to Voth Area. I brought along a Semi-pal with a broken wing and empty stomach to try a timed feeding experiment. Released bird along pond edge. He showed interest in feeding, but was obviously acting abnormally. Killed it and pickled stomach after 30 minutes.

Drove across Footprint lake and stopped by old (well vegetated) polygons just west of lake. Spent an hour or so just digging up tundra, looking for tipulid larvae plus whatever else was there. Found larvae again in mossy hummocks. Also found adult carabids down in the ground at 2 to 4 cm. These were clumped in distribution; 2 to 5 animals were found in close proximity where Carabids were found. This is probably a behavioral process, as there was no evident habitat feature which might cause clumping.

Macleod
1966

also found Muscid (?) pupae - singly in the soil. These were saved for identification.

Ate lunch here, then moved on toward Ikroawik. A few pectorals around and occasional red-backs (both adults and immatures) - but not too much bird activity. Drove to lake West of Ikroawik and repeated tundra digging with about the same results. Collected a total of 20 Tipula larvae for the day.

The tundra has definitely changed color. This was, I think, a very green year and green remains, however the brown color greatly predominates.

On the way into the village turned many drums without finding a cardbis. I think they must have gone into the ground, as found earlier today. These drums looked like they should have (or have had) beetles.

Upon returning measured the Tipula larvae (relaxed, in water) to get a size distribution. Found average 21.9 mm (17-26). May try repeating at intervals next season to

MacLean
1966

combine with census data to give Tipula "standing crop".

Spent the rest of the evening preparing materials for trip to Fairbanks and work at the U. of A.

24 August

Barrow to Fairbanks, Alaska

Had to stay close in the morning for the flight which finally got away after lunch. Flew with Harvey Wieler in a Cessna 180. [His pig of a girlfriend was mad because she didn't get to go.] Flew low for the first hour or so. Saw lots of caribou, one flock of ca. 25 black brants - no owls, no jaegers. Several flocks of shorebirds could not be identified. Went up above clouds, then landed at Anaktuvuk to deliver drum of white gas. It was rainy but warm in the Pass - people as friendly as ever. Only a brief stop, then off again, flying low. The hardwoods below timberline were in beautiful fall colors. It is funny that the Anaktuvuk people could move but a few miles to be at timberline with

Maclean
1966

plenty of wood for fuel and houses, and plenty of game too. Saw several moose and buzzed a big brown bear in an open meadow. After a while went higher and flew on to land at Fairbanks after 8:00 P.M. By the time we had gotten Harvey's car, visited a few people, and eaten the only room available was at the Traveler's Inn at $18.00. Sorry, but I was too tired to care.

25 August

Fairbanks to College, Alaska

Woke feeling lousy from lack of food. After breakfast and a few errands in town called Dr. George West at the Institute of Arctic Biology and he drove into town. Paul De Benedictis had beaten me there, and was with West. (He, too, has stayed at the Traveler's. The project budget will suffer from that night.) Drove out to College and the new Institute building - tremendous facilities. The biology department has one floor and the Institute another. West's lab is very well set up and equipped.

Macheson
1966

Done right in by preparing insect material for freeze drying and starting the system. After dinner with Paul returned to the lab, connected frozen insects to the vacuum system, then spent the rest of the evening plucking and cutting up birds for fat extraction — not exactly an exciting pastime. Finished in time to drive Paul to the airport in the jeep which the Institute provided for my use. Returned to new (and much cheaper) room in Hess Hall - an old dormitory on "lower campus".

26 August

College, Alaska

Spent the day working with the calorimeter (a Parr Oxygen Bomb Calorimeter) to learn the technique and experiment with adulteration of samples with the standard - benzoic acid. It worked well using the Ptarmigan excrement they had available.

Weighed my dried (oven dried, that is) insects and found every weight greater than Holmes'.

Maclean
1966

Ate Dinner at Dr. West's home - very pleasant wife and two boys. Returned to the lab to begin actual measurements. After one good trial had a series of incomplete explosions which wasted several samples, damnit.

27 August

College, Alaska

Again - trouble with incomplete explosions. Then more trouble - the power went off. Called West and he came in. Suggested that I make pellets for the calorimeter to improve burning, and tried to show me the method in the dark. Also showed me what to do to put the vacuum system back in operation when the power comes back. Not much more that could be done, so walked into mixed spruce - hardwood woodland behind the building. Many slate-colored juncos and white-crowned sparrows, especially along the edges where Chenopodium is the dominant weed, along with Epilobium. Both are now in seed. (In fact - everything is now in seed.) Weather was quite warm -

Maclean
1966

around 80°. too hot! Drove into town to do some shopping for Harry Brower and ed. Returned - power still off, and it remained off all evening.

28 August

College, Alaska

Up early, and power was back. Put vacuum system back in operation to finish drying birds, then started calorimetry using pellets. this solves the problem of incomplete explosions. Worked straight through with one meal break, and finished the last sample about 5:30 P.M.. Todays results made it all worthwhile. Found Chironomid larvae of both types to be the lowest grade food; cardbis adults the most potent.

Cleaned up the calorimeter, then drove out to the airport. Tom had flown down on the R4-D. (a good thing, as Wien missed the Pan-Am departure.) Talked with him and Chris Leydon, then saw them onto the plane and returned to the dorm.

~~Barrow~~
Maclean
1966

29 August

College to Barrow, Alaska

Spent the morning in West's lab grinding birds and beginning fat extraction. West's assistant, a real nice chinese girl named Martha Meng, helped and agreed to weigh the final product so that I could leave today.

Visited with Dr. Brina Kessel, then went through the U. of A. skin collection (not too impressive) and public museum (more impressive - very interesting).

Finished up at the Lab, then caught a ride to the airport and caught the F-27 back to Barrow. Flew above the clouds all the way - didn't see a thing. Landed just after 8:00 P.M.. Barrow was cold and windy, with snow on the ground. Found one of my bags missing.

Went into A.R.L. to stow gear and clean up, then rode into Barrow village and spent the rest of the evening there.

Maclean
1966

30 August — Barrow, Alaska

Began the job of packing for departure. Rolled all of the specimens in paper tubes and ordered a shipping box. Next began sorting and packing other gear. This job always takes much longer than expected.

In the afternoon decided to go out and shut down the tanglefoot traps. Piled into the wessel ..... and couldn't start it. All mechanic-types were working on loading the Coast Guard icebreaker for a trip to the ice-island, so we never did get it started. Went back to packing, then spent the evening in town.

31 August — Barrow, Alaska

S. MacLean

1964 - 1966

1966: feeding observation tables

SHOREBIRD FEEDING OBSERVATION

SAMPLE: 9 JN / BR / a / 001 / 8P / f / sat / 1A/ 5/1 / 0
15 pk, 2 ser j 10-12 ea

Date Loc Sp No. Time Top Moist Veg H:L/D Cut

Species:
a - Calidris alpina
b - C. bairdii
f - C. fuscicollis
p - C. pusillus
m - C. melanotos
T - Tryngites subruficollis
Pd - Pluvialis dominica
A - Arenaria interpres
Pf - Phalaropus fulicarius

Number: 001, 002, 003 etc. without regard to different species, places, or dates

Time: In hourly intervals. 8 = time betw. 8 and 9. P, p.m.
A, a.m.

Topography: f - flat or gentle slope
lp - low polygon
rp - raised polygon
pt - polygon trough
pe - pond edge
d - disturbed ground, as weasel tracks, etc.
s - stream bank
m - mound
ch - channel

Moisture: pw - pond water w - wet
sw - standing water d - dry
(flooded tundra)
sat - saturated.

Vegetation: 0 - bare ground 2 - 25-50% gram's
+ - moss and lichen only 3 - 50-75% "
1 - less than 25% graminiforms 4 - 75-100% "

A - moss and/or lichen understory
B - bare ground or 'muck' understory

Height, living/dead: 0 (prostrate) or 1, 2, etc. (inch intervals)

Cuttings: 0, 1, 2, or 3 (none, some, moderate, heavy)

Style: peck (pe), jab (j) or probe (pr)

Maximum observations from one individual:
30-sec. unit observation x 5 without flying
additional 30x5 each time bird flies, up to 5 sites

Maclean
1966

Sharebird feeding observations

7 June	a	001	2P	f	sdt	3/0	A	0/3	Co	jab
W. of Honeybucker	a	002	2P	f	w	4/0	A	0/3	Co	
	a	003	2P	tr	w	4/0	A	0/2	Co	
Cake-eater	a	004	3P	f	sdt	4/0	A	0/3	C2	jab
	a	005	3P	f	w	3/0	A	0/2	Co	10 ser jab. (6-8)
				f	sdt	3/0	A	0/2	Co	near cont. jab
	p	006	3P	ch	sw	3/0	A	0/3	Co	peck
	a	007	3P	f	w	4/0	A	0/2	Co	jab. next to 006.
	a	008	3P	f	w	4/0	A	0/2	C1	next to snow bank
	a	009	3P	f	sdt	4/0	A	0/1	C1	jab
	a	010	3P	f	w	4/0	A	0/2	Co	jab
	a	011	3P	f	w	4/0	A	0/2	C1	jab
8 June										
Drum area	a	012	9A	f	w	4/0	A	0/3	Co	6 ser jab (2-6) next to snowbank
	p	013	10A	f	sdt	2/0	A	0/2	Co	peck
				m	w	1/0	A	0/1	Co	peck
				m	w	1/0	A	0/2	Co	peck
	p	014	10A	m(d)	w	0/0	B	—	—	peck - visual
	b	015	10A	f	w	2/0	A	0/2	Co	snow bank 1 ft.
				f	w	2/0	A	0/1	Co	snowbank 2 ft.
				(small exposed spots in near total snow cover.)						
	b	016	10A	f	w	3/0	A	0/2	Co	snow bank edge
	Pd	017	10A	f	w	1/2	A	0/1	Co	snowbank 1 ft.
	b	018	10A	f	w	1/0	A	0/1	Co	(flock of 5)
Beach Ridge	a	019	11A	f	w	3/0	A	0/2	Co	near cont. jab
				f	w	4/0	A	0/2	Co	13 ser. jab (4-11)
				f	w	4/1	A	0/2	Co	jab. all 5 near snow.

Maclean
1966

[8 June]	a	020	11 A	f	sdr	3/0	A	0/2	Co	12 ser. deep jab (4-8)
Voth Area	p	021	10P	f(d)	sw	2/0	A	0/3	Co	peck
9 June										
Voth Area	a	022	10A	f	w	4/0	A	0/3	Co	jab.
	♀ p.	023	10A	f	w	4/0	A	0/3	Co	peck by snowbank
				f	w	3/0	A	0/3	Co	collected
	a	024	11 A	f	w	4/0	A	0/2	C2-old.	jab by snowbank
Footprint Lake	a	025	3P	f	w	4/0	A	0/1	Co	
	f	026	3P	f	w	4/0	A	0/1	Co	
	a	027	3P	m	w	3/1	A	0/1	Co	jab. collected
	a	028	3P	f	w	3/0	A	0/2	Co	small exposed spot.
				f	w	3/0	A	0/2	Co	
				m	w	2/0	A	0/2	Co	part of flock of A
	a	029	3P	ch	w	4/0	A	0/2	Co	peck and jab
	♂ a	030	4P	f	w	4/0	A	0/2	Co	
				ch	sdr	4/0	A	0/2	Co	jab
				f	sdr	4/0	A	0/2	Co	near cont. jab
10 June										
Voth area	a	031	10A	f	w	4/0	A	0/3	Co	snow bank
	a	032	10A	f	w	3/0	A	0/3	Co	8 ser. jab (2-6)
	♀ a	033	11 A	f	w	1/2	A	0/1	Co	9 ser jab (3-8)
	p	034	11 A	f	w	3/0	A	0/2	Co	snow bank edge
				f	sdr	4/0	A	0/3	Co	snow bank edge
	♀ a	035	11 A	f	w	3/0	A	0/3	Co	14 ser jab (3-6)
										near cont. to moss.
				f	w	3/0	A	0/2	Co	11 ser. jab (4-10)
										v. sm. break in snow
				f	sdr	4/0	A	0/3	Co	near cont. jab. score 2.

Kaelson
1966

[10 June]	p	036	11A	lp	w	1/2	A	0/1	Co	peck - visual
	p	037	11A	f	w	3/0	A	0/3	Co	snowbank edge
	♀a	038	11A	m	w	3/0	A	0/1	Co	
				f	sdt	3/0	A	0/2	Co	6ser jab (3-10)
Elson lagoon	♀m	039	3P	f	sdt	4/0	A	0/2	Co	jab singally
				m	w	3/0	A	0/1	Co	mixed peck, jab (1-3)
				f	sdt	4/0	A	0/2	Co	
	a	040	3P	f	sdt	4/0	A	0/2	Co	jab in series.
				note: 039 + 040 together; a jab long series,						
				m. jab 1-3 at most.						
	♀m	041	4P	rp	d	0/0	B	—		few pecks
	a	042	4P	rp	d	0/0	B	—		
	♀m	043	4P	f	sdt	4/0	A	1/3		near conc. jab
	f	044	4P	lp	w	3/1	A	0/2		
	f	045	4P	f	sw	4/0	A	0/3		
	f	046	4P	lp	w	4/0	A	0/2		17 probe/deep jab
				lp	w	4/0	A	0/2		16 probe/deep jab
11 June										
Drum area	p	047	9A	lp	w	2/0	A	0/1	Co	occasional peck
	♀a	048	9A	f	sdt	3/0	A	0/2	Co	
Beach Ridge	a	049	10A	m	w	2/1	A	0/1	Co	
				f	w	4/0	A	0/3	Co	snowbank edge
	p	050	11A	f	d	2/1	A	0/1	Co	peck. moving.
				f	sdt	4/0	A	0/3	Co	5 pecks. snowbank
				m	d	3/0	A	0/2	Co	
	f	051	1P	f	sdt	4/0	A	0/2	Co	probe/deep jab.
CREEL	b	052	2P	m	w	2/1	A	0/1	Co	15 peck (1-3)
				m	w	2/1	A	0/1	Co	8 peck + 1 ser jab (8)

Maclean
1966

11 June	b	052		m	w	3/1	A	0/2	Co	peck + shal. jab.
				m	d	3/1	A	0/2	Co	cont. peck.
				m	d	2/1	A	0/1	Co	9 jab - got tipula
	a	053	2P	f	w	4/0	A	0/2	Co	
	a	054	3P	m	w	4/0	A	0/1		9 ser jab (4-8) snowbank edge.
	♂P.f.	055	3P	f	sw	4/0	A	0/2	Co	tossing in wet litter
				f	sw	4/0	A	0/1	Co	tossing in wet litter
S. of Wohlslag	pf	056	9P	f	sw	4/0	A	0/2	Co	20 individual tossing jabs
				f	sw	4/0	A	0/2	Co	17 tossing jabs.
				note: this is more a hunting than a food procuring motion						
				collected both birds - pair.						
	pf♂	057	10P	f	Sat	4/0	A	0/2	Co	17 jab by snowbank
	pf♀				po	pw				collected both
	♂p	058	10P	f	sat	3/0	A	0/2	Co	collected
	p	059	10P	f	sat	3/0	A	0/2	Co	10 peck / 15 sec.
	♂/♀									pair - collected
	b	060	11P	f	w	4/0	A	0/2	Co	jab
				f	w	4/0	A	0/2	Co	Deep jab
				f	sat	4/0	A	0/4	Co	jab
13 June										
Village Ridge	b	061	2P	lp	d	3/0	A	0/1		collected
	b	062	2P	m	d	2/1	A	0/1		snowbank collected
	b	063	3P	f	w	2/2	A	0/3		collected
Cake-Eater	♂sand.	064	3P	lp	w	3/0	A	0/2		
				lp	w	4/0	A	0/2		jab singly

acheson
1966

13 June		064		lp	sat	3/0	A	0/2		
	p	065	3P	lp	w	2/0	A	0/1		collected ♂/♀
	♂m	066	4P	f	sw	4/0	A	0/2	Co	
				f	sat	4/0	A	0/2	Co	
Beach Ridge	a	067	9P	f	sat	3/0	A	0/2		12 ser jab (4-10)
				f	sat	3/0	A	0/2		
	♀Pf	068	9P	f	sw	4/0	A	0/2		
	p	069	9P	f	sw	4/0	A	0/2	Co	peck
	p	070	10P	f	sw	3/0	A	0/3	Co	
	Pf	071	10P	po	pw					
14 June										
P's plot	♂Pf	072	2P	f	sw	4/0	A	0/3	Co	
	♂p	073	2P	f	sat	4/0	A	0/3	Co	mixed peck / jab
				m	w	1/0	A	0/1	Co	3 pecks
	♂p	074	2P	f	sat	3/0	A	0/2	Co	8 pecks / 1 ser. jab.
	Pd	075	2P	rp	w	1/0	A	0/1	Co	peck
				rp	w	1/0	A	0/1	Co	
	♀P.f.	076	2P	lp	w	2/0	A	0/2	Co	peck
	♂a	077	2P	f	sat	4/0	A	0/2	Co	8 ser. jab (4-12)
	a	078	3P	m	w	3/0	A	0/2	Co	jab
				m	w	2/1	A	0/1	Co	jab
				ch	sat	3/0	A	0/2	Co	jab
	♀a	079	3P	f	w	4/0	A	0/3	Co	8 ser jab.
				f	sat	4/0	A	0/2	Co	10 ser jab
	♂a	080	3P	pe	sat	2/0	A	0/2	Co	jab
	♂Pf	081	3P	f	sw	3/0	A	0/2	Co	
	♂a	082	3P	lp	d	2/0	A	0/2	Co	few jabs
	♂p	083	3P	f	sw	3/0	A	0/3	Co	

Maclean
1966

[14 June]	♂Pf	084	3P	Po	pw	2/0	A	0/3	Co	
	♀Ai	085	4P	m	sdr	2/0	A	0/2	Co	8 tossing pecks
				lp	d	2/0	A	0/2	Co	7 peck - visual.
				f	sdr	2/0	A	0/1	Co	
	L.S.	086	4P	f	sdr	2/0	A	0/2	Co	continual job.
				pE	sw	2/0	A	0/4	Co	
	♂P.f.	087	4P	f	sdr	2/0	A	0/5	Co	
	♂P.f.	088	4P	PE	sw	3/0	A	0/3	Co	
	♀Pf	089	8P	Po	pw	0/0		0/0		spin-peck into litter
	p	090	8P	pE	sdr	3/0	A	0/2	Co	
	♂m	091	8P	ch	sdr	2/1	A	0/1	Co	
15 June										
W. Vothr Area	♀Pf	092 [sic]	11A	Po	Pw	0/0		0/0		visual
	Pd	094	11A	f	sdr	3/0	A	0/3	Co	5 peck or shd. job
	♀Pf	095	1P	Po	pw	1/0	A	0/2		job into litter
										collected
	b	096	2P	rp	d	1/1	A	0/1	Co	collected
	a	097	3P	f	sw	3/0	A	0/3	Co	job. collected
	Pf	098	4P	Po	pw	1/0	—			collected ♀, ♂, ♂.
20 June										
Vothrea	p	099	2P		sdr	2/0	A	0/2	Co	
	a	100	2P	PE	sdr	2/0	A	0/2	Co	
				PE	sdr	2/0	A	0/2	Co	job
	a	101	2P	PE	sdr	3/0	A	0/4	Co	job
	♀Pf	102	3P	PE	sw	2/0	A	0/2	Co	
				Po	pw	0/0		0/0		floating litter
				PE	sdr	2/0	A	0/2	Co	3 pecks

Maclean
1966

[20 June]	♂a	103	3P	lp	sdr	0/0	A	0	Co	few peeks
				pE	sdr	2/0	A	0/3	Co	16 jab (2-5)
				pE	sdr	2/0	A	0/3	Co	
	♀ Pf	104	3P	PE	Pw	1/0	A	0/3	Co	
	♂Pf	105	3P	Po	pw	1/0	B	0/2	Co	foot paddling
	♂Pf	106	3P	PE	pw	1/0	A	0/3	Co	v. active
					f	sdr	3/0	A		
				f	sdr	3/0	A	1/3	Co	
				pE	pw	2/0	A	0/3	Co	
	♀m	107	4P	Po	pw	1/0	A	2/2	Co	floating litter
				po	pw	1/0	A	2/2	Co	
	♂P.d.	108	9P	f	sw	3/0	A	1/2	Co	
	♀ Pd			f	sdr	3/0	A	1/3	Co	
	♀m	109	10P	f(d)	sw	2/0	A	1/3	Co	
	p	110	10P	f(d)	sw	0/0	B	—	—	peck
21 June										
S. of Uoth	Pd	110	4P	f	sw	3/0	A	1/4	Co	peck
	♀Pf	111	4P	f	sw	2/0	A	1/2	Co	collected
	♂m	112	5P	f	sdr	3/0	A	1/2	Ci(dd)	jab singly.
	♀i	113	5P	f	w	4/0	A	1/3	Co	
	♂f	114	5P	PE	sdr	1/0	A	1/3	Co	peck in litter.
				f	sdr	3/0	A	1/2	Co	jab (3-4)
22 June										
Ikroavik	♂Pf	115	10A	pE	sdr	2/0	A	1/3	Co	tossing jabs in litter
	a	116	12P	lp	w	2/1	A	1/3	Co	peck. Collected (2-7)
	♀m	117	1P	lp	w	3/0	A	1/3	Co	11 ser jab, 1 ser probe
				lp	sdr	3/0	A	0/2	Co	14 ser jab (3-7)
				lp	w	4/0	A	0/3	Co	11 ser jab. Collected

Maclean
1966

[22 June]	♀Pf	118	1P	Po	pw	1/0	B	1/4	Co	collected
	♀P.f.	119	1P	Po	(w") pw	2/0	A	1/5		5 diving jabs
	♂m	120	2P	f	sw	2/0	A	1/2	Co	jab
				f	sw	2/0	A	0/4	Co	
				f	sdr	3/0	A	0/3	Co	collected
	♀a	121	2P	Pε	pw(1")	2/0	A	0/4	Co	jab
	♂m	122	3P	f	sdr	2/0	A	1/3	Co	near cont. jab-coll.
	a	123	3P	m	w	4/0	A	0/3	Co	cont. jab.
	♀Pf	124	3P	Pε	sdr	2/0	A	0/2	Co	jab. Collected.
	Pf	125	4P	Pε	pw	1/0	B	0/3	Co	collected.
24 June										
Holmes' Morcos	♂/♀P.f.	126	1P	Po	pw	1/0	A	1/3	Co	
	a	127	1P	Po	pw	1/0	A	1/3	Co	
	♀Pf	128	1P	Po	pw	0/0	A	–	–	peck into litter
	Pd	129	1P	f	sw	3/0	A	1/3	Co	
	♂m	130	1P	f	sw	3/0	A	1/3	Co	
	♂m	131	1P	f	sw	4/0	A	1/3	Co	
	♀Pf	132	2P	Pε	sw	1/0	A	1/3	Co	5 pecks to litter
				Pε	sw	1/0	A	2/4	Co	8 peck, 2 litter toss
	Pd	133	2P	f	sw	4/0	A	2/4	Co	3 peck
				f	sw	4/0	A	2/4	Co	3 peck
	a	134	2P	tr	sdr	2/0	A	2/4	Co	
	m	135	2P	f	w	4/0	A	1/3	Co	
	ai	136	2P	f	w	3/0	A	1/3	Co	tossing - 9 times
	♂a	137	3P	f	sdr	3/0	A	1/3	Co	peck
	♂/♀Pd	138	3P	f	sdr	2/0	A	1/3	Co	
	♀a	139	4P	tr	w	2/0	A	1/2	Co	peck - testing?
				f	d	2/0	A	1/2	Co	peck + jab sing.

Lacheden
1966

25 June	♀m	140	10A	lp	w	2/0	A	0/2	Co	11 peck
aacs marsh				lp	d	3/0	A	0/2	Co	peck, occ. jab
				lp	d	3/0	A	0/2	Co	
	♀m	141	10A	lp	d	3/0	A	0/2	Co	
	c.alba	142	10A	lp	d	3/0	A	0/2	Co	
	b	143	4P	lp	w	1/0	A	1/3	Co	peck
	a	144	9P	lp	w	4/0	A	1/3	Co	Bser. shallow jab (2-5)
	b	145	10P	f	w	4/0	A	0/3	Co	
	ai	146	10P	f	w	4/0	A	2/5	Co	peck
	a	147	10P	f	w	4/0	A	1/4	Co	shallow jab
				f	w	4/0	A	1/3	Co	
				f	w	3/0	A	1/3	Co	Bser. jab (4-8)
	ai	148	10P	f	sdr	2/0	A	2/3	Co	tossing
	♂m	149	10P	f	sdr	1/0	A	3/4	Co	
				f	sdr	2/0	A	2/4	Co	jab
	Pd	150	10P	f	sdr	3/0	A	1/4	Co	
	a	151	11P	Pe	sdr	1/0	A	1/2	Co	jab
26 June										
	♂m	152	3P	f	sw	3/0	A	2/4	Co	
27 June										
	♀P.f.	153	11A	Pe	Sw	1/0	A	3/3	Co	
	♂P.f.			Pe	pw	1/0	A	3/4	Co	
	♂b	154	11A	m	d	1/0	A	1/3	Co	peck
	a	155	11A	Pe	sdr	1/0	A	2/2	Co	jab
				tr	sdr	2/0	A	1/2	Co	jab
	Pd	156	11A	f	sw	3/0	A	2/4	Co	

Maclean
1966

29 June	♂a	157	4P	ch	w	3/1	A	2/4	Co	jab
SW of Barrow	b	158	5P	m	d	0/2	A	0/0	Co	peck
				m	d	1/2	A	1/5	Co	
	♂Pd	159	6P	ch	w	1/2	A	0/3	Co	
				ch	w	0/1	A	0/0	Co	
				m	w	1/2	A	0/2	Co	4 ser. peck (3-5)
	♂a	160	10P	st.b.	w	0/0	B	—	—	jab. collected.
30 June										
	♂m	161	8P	f	sdr	3/0	A	1/4	Co	near cont. probe
1 July		~~tt~~								
across Wohlstaq	a	162	9A	f	sdr	3/0	A	0/3	Co	jab near snowbank
	♂m	163	10A	f	w	3/0	A	1/3	Co	jab. collected
	a	164	10A	f	w	3/0	A	2/3	Co	jab.
	♂m	165	10A	f	sdr	3/0	A	3/5	Co	
	♀P.f.	166	11A	f	sdr	3/0	A	1/3	Co	peck
				pε	pw(1")	2/0	A	3/5	Co	
	♂pf	167	11A	pε	pw	2/0	A	3/5	Co	collected
	a	168	11A	tr	sdr	2/0	A	2/3	Co	
	a	169	2P	lp	d	2/0	A	1/3	Co	peck + jab
	a	170	2P	pε	pw	0/0	A	—	—	
				lp	w	3/0	A	2/3	Co	
	Pd	171	2P	lp	w	2/0	A	1/2	Co	peck - ca. 4
				tr	w	3/0	A	2/4	Co	
	♀P.f.	172	2P	pε	pw (4")	0/0				
				p o	pw	0/0				collected
	♂m	173	3P	lp	w	2/0	A	2/3	Co	jab. collected
2 July										
	P	174	10A	pε	sdr	1/0	A	6/6	C1	peck

Maclean
1966

3 July	♂m	175	9P	f	d	4/0	A	2/3	Co	
				f	w	3/0	A	2/3	Co	
	b	176	10P	lp	d	3/0	A	2/3	Co	peck - ca. 15.
	p	177	10P	lp	d	3/0	A	2/3	Co	peck
	p	178	10P	lp	w	3/0	A	2/3	Co	peck
	b	179	10P	lp	d	3/0	A	1/3	Co	peck
4 July										
Central Marsh	♂m	180	10A	f	sdr	2/0	A	2/4	Co	jab. collected.
5 July										
Holmes' Morass	b	181	2P	m	d	1/1	A	2/3	Co	peck
				m	d	3/1	A	1/2	Co	peck
	ai	182	2P	f	sdr	4/0	A	3/4	Co	
	m	183	2P	f	sdr	4/0	A	3/4	Co	
	♂Pf	184	3P	f	w	4/0	A	3/4	Co	v. rapid peck
				f	w	4/0	A	3/5	Co	peck
				f	w	3/0	A	3/4	Co	
	♀a	185	3P	lp	sdr	1/0	A	2/3	Co	peck
				lp	sdr	2/0	A	1/2	Co	peck
				lp	w	2/0	A	2/3	Co	6 peck, 3 jab
				score or jab. peck may be searching.						
				lp	w	2/0	A	2/3	Co	10 jabs
				tr	w	4/0	A	2/4	Co	
	m	186	3P	f	sdr	3/0	A	3/4	Co	
	♀Pf	187	3P	f	sdr	3/0	A	2/3	Co	collected 2 each.
	♀Pf	188	3P	Pe	sw	2/0	A	3/4	Co	
7 July										
Drum area	b	189	9P	gravel		0/0	B			peck at small Diptera

Macleod
1966

8 July	p	190	9A	f	w	2/0	A	2/3	Co	peck
SW of Village	p	191	9A	m	d	2/2	A	2/3	Co	peck - collected
	f	192	11A	f	w	3/0	A	1/4	Co	job. collected
	♂m	193	2P	tr	w	3/0	A	2/4	Co	collected
	♂a	194	6P	po	pw	0/0	B	—	—	probe-head into wat.
11 July										
	♂P.f.	195	5P	Po	pw	0/0	B			surface peck-score
12 July										
	a	196	12A	f	w	3/0	A	4/5	Co	5 peck
	a			lp	w	2/0	A	2/2	Co	peck
	a			tr	w	2/0	A	2/2	Co	peck
13 July										
Vothaea	p	197	1P	pE	sdr	1/0	B	3/3	Co	peck
				pE	pw	0/0	B			peck
14 July										
	Pd	198	9P	f	d	0/1	A	0/0	Co	peck
	a	199	10P	lp	w	2/0	A	3/4	Co	peck-collected
	a	200	10P	lp	sdr	3/0	A	2/3	Co	
	a	201	10P	rp	d	1/0	A	1/2	Co	collected
18 July										
	Pf	202	8P	f	sw	2/0	A	4/5	Co	
	♂/3 juv.									
19 July										
Drum area	p	203	2P	pE	pw	0/0	B			peck
23 July										
Below Gasline	♂Pf.	204	10P	PE	pw	1/0	B	5/5	Co	collected
	♂Pf	205	10P	PE	pw	0/0	A	—	—	collected
	P	206	11P	f (d)	sdr	0/0	B	—	—	job into much

Maclean
1966

28 July Beach Ridge	b	207	4P	m	d	0/2	A	0/0	Co	peck-ca. 3
29 July Ikroduik	a	208	2P	lp	d	3/1	A	4/4	Co	jab. collected?
	jw.a.	209	3P	tr	sdr	3/0	A	5/6	Co	
				lp	sdr	4/0	A	5/6	Co	slo lemming runway - collected
	a	210	3P	f	sw	3/0	A	4/5	Co	♂, ♀, jws.
	jwa	211	7P	tr	sw	3/0	A	5/5	Co	collected
	a	212	8P	f	w	4/0	A	3/4	Co	
30 July										
	p	213	3P	Pe	sdr	1/0	A	5/5	Co	
	p			Pe	sdr	1/0	A	5/5	Co	
	♀m	214	3P	Pe	sdr	1/0	A	5/5	Co	sphagnum patch
1 August										
	b	215	7P	Pe	sdr	0/0	B	—	—	
2 August										
	p	216	1P	Pe	sdr	3/0	A	6/6	Co	collected 8 of 40
	b	217	1P	Pe	sw	2/0	A	6/6	Co	w/216
	♀m	218	1P	Pe	sw	2/0	A	6/6	Co	w/216
	p	219	3P	pe	pw	1/0	A	4/4	Co	
6 August										
	Pd	220	4P	f	w	3/1	A	4/4	Co	peck. flock of 8
7 August										
	p	221	1P	Pe	pw	0/0	B	—	—	jab to 1 cm.
9 August										
	a	222	4P	pe	sdr	0/0	A	—	—	near cont. jab.

MacLean
1966

9 August	Pd	223	4P	f	sdr	3/0	A	4/4	Co	flock
10 August										
Central Marsh	m	224	9P	f	sw	3/0	A	4/4	Co	collected 1 of 8.
11 August										
	P	225	4P	pE	sw	0/0	B	—	—	continual jab
13 August										
	a	226	1P	pE	Sdr	1/0	B	6/6	Co	jab
	Pd	227	1P	m	d	1/2	A	3/3	Co	
	m	228	1P	PE	pw	1/0	A	8/8	Co	probe in short bursts
	m	229	1P	pE	pw	1/0	B	4/4	Co	jab
	imm. a	230	1P	pE	pw	1/0	B	4/4	Co	jab. w/ 229.
										229 displaced 230.
	m	231	1P	pE	pw	1/0	B	3/3	Co	probe
				pE	pw	2/0	B	4/4	Co	probe
	imm a.	232	1P	pE	pw	2/0	B	4/4	Co	probe
	t.s.	233	2P	f	d	2/1	A	3/3	Co	peck
				imm. bird. followed 7 15 min along f, d. ridge						
	m	234	2P	tr	sdr	1/0	A	8/8	Co	
	m	235	2P	pE	pw	0/0	A	—	—	
	m	236	3P	tr	sw	1/0	A	8/8	Co	
				tr	sdr	0/0	A	—	—	probe in moss.
	m	237	3P	f	sdr	0/0	A	—	—	probe
	m	238	3P	pE	pw	0/0	A	—	—	probe
	m	239	3P	f	sdr	0/0	A	—	—	probe
	m	240	3P	PE	sw	2/0	B	6/6	Co	
	imm. a.	241	4P	pE	sdr	1/0	B	5/5	Co	jab
	m	242	4P	PE	sdr	0/0	B	—	—	jab in short bursts.
	a	243	4P	lp	d	2/0	A	3/4	Co	4 copulas. jab.

Maclean
1966

[13 August] Birnirk	a	244	4P	tr	sat	0/0	A	–	–	w/243
	imm a	245	11P	pε	pw	0/0	B	–	–	jab. collected.
	imm a	246	11P	pε	sat	0/0	B	–	–	jab. collected.
	imm. p.	247	11P	pε	sat	0/0	B	–	–	jab. collected
14 August Drum area	p	248	2P	pε	sat	0/0	B	–	–	jab
	imm. a.	249	2P	pε	pw	0/0	B	–	–	Deep jab
				part of large flock, all as above ~~part~~						
				alpine standing in water; pusillus or ε.						
	imm a	250	2P	pε	pw	0/0	B	–	–	probe
	Pd	251	2P	lp	d	4/0	A	3/3	Co	peck
	m	252	2P	pε(d)	sat	0/0	B	–	–	jab
	m	253	2P	pε	sat	1/0	B	6/6	Co	jab
	m	254	2P	pε	sat	0/0	B	–	–	jab
	m	255	3P	pε	sat	1/0	A	7/7	Co	jab
	m	256	3P	pε	sat	1/0	B	6/6	Co	probe
	m	257	3P	pε	sat	1/0	B	4/4	Co	jab
	a	[sic.] 257	3P	tr	w	3/0	A	3/3	Co	
	m	258	3P	f	sw	2/0	A	7/7	Co	
	ai	259	3P	lp	d	1/0	A	2/2	Co	peck
	m	260	3P	pε	pw	1/0	B	5/5	Co	
	m	261	3P	pε	sat	0/0	B	–	–	
	p	262	3P	pε	pw	1/0	B	6/6	Co	
	m	263	3P	pε	sat	0/0	B	–	–	jab
	p	264	4P	pε	sat	1/0	B	4/4	Co	jab
	m	265	4P	f	sat	2/0	A	4/4	Co	
	imm. a.	266	4P	pε	pw	0/0	B	–	–	jab

acLean
1966

[14 August]	m	267	4P	f	sw	2/0	A	5/5	Co	
	imm.a	268	5P	pE	sw	2/0	B	8/8	Co	
	m	269	5P	pE	sdr	1/0	B	5/5	Co	jdb
	imm.a.	270	6P	pE	sdr	1/0	B	4/4	Co	jdb
	p	271	6P	pE	sdr	1/0	B	4/4	Co	
5 August	imm.a.	272	11A	pE	sdr	0/0	B	—	—	jdb + probe
	T.s.	273	4P	f	d	0/2	A	—	—	peck-collected
10 August										
	m	274	10A	pE	sdr	0/0	B	—	—	
	imm.a.	275	10A	f	sw	3/0	A	6/6	Co	
31 August										
	imm Pd	276	3P	f	w	3/0	A	2/4	Co	(frozen). peck. collected

S. MacLean

1964 - 1966

1966: insect samples

Maehdr
1966

Sod samples

7 June

Voth area - Barrow, Alaska

1) F - sdr - 3/0 A 0/2 Co permafrost 3/4"
snowbank 6 inches. dense moss.
17 Collembolans
1 small spider.

2) F - w - 4/0 A - 0/4 Co permafrost 1/2"
snowbank 1 ft.
19 Collembolans
1 4 mm nematode

3) f - w - 4/0 A - 1/3 Co permafrost 1/2 inch
snow bank 20 feet
10 Collembolans
1 small spider

4) f - sdr - 4/0 A 0/3 Co permafrost 1 inch
snow 6 feet
16 Collembolans
4 nematodes, 8-10 mm.

5) f - sdr - 4/0 A 0/4 Co permafrost 1/2 inch
snow 4 ft.
2 Collembolans !

6) f - w - 4/0 A 0/3 Co Permafrost 2 inches
snow 15 ft.
1 staphylinid larva (9 mm)
1 Chironomid larva (8 mm)

Macfean
1966

Pitfall Traps

28 July — 0000 - Activated 19 of Kurt Bohnsack's old traps in Drum area, just S. of water line, on high polygonal ground.

1400 - 3 Carabids
1 Staphylinid

29 July — 0900 - 1 Carabid

30 July — 1400 - Zero.

found 2 additional sites. Now 21 active cans (old milk cans - dia =)

31 July — 1600 - 1 Carabid

1 August — 1500 - 1 Carabid, 2 Staphylinids.

2 August — 0900 - 1 Carabid, 1 Staphylinid.

3 August — 1000 - Zero

6 August — 1700 - 5 Carabids, 6 Staphylinids.

7 August — 1600 - 1 Carabid.

8 August — 1100 - 1 Staphylinid

9 August — 1400 - 1 Carabid, 1 Staphylinid

10 August — 1400 - 2 Staphylinids

11 August — 1400 - 2 Carabids

12 August — 1600 - 4 Carabids

13 August — 1800 - 2 Carabids

14 August — 1800 - 2 Carabids, 1 Staphylinid.

15 August — 2100 - 1 Carabid.

16 August — 1800 - 2 Carabids.

17 August — 1500 - 1 Carabid

23 August — 2000 - 2 Carabids

Maclean
1966

Tanglefoot traps

27 June – 2 July

I - 1

38 ad. Chironomios
3 spiders
Collembolans "4" >2500 (very dense)

I - 2

43 ad. Chironomios
5 spiders
Collembolans "2" (moderate)
3 ~~larger~~ ad. ~~Diptera~~ Muscid - sized

I - 3

Collembolans "2"
19 ad Chironomios
8 ad Muscios
1 spider

I - 4

40 ad. Chironomios
6 ad Muscios
2 spiders
Collembolans "1" <200

I - 5

20 ad. Chironomios
3 ad muscids
1 ad spider
Collembolans "1" <200

Maehan
1966

Tanglefoot traps

(2 July) I-6 - 17 ad. Chironomids
4 ad muscids
3 spiders
Collembolans "1" (ca. 150)

---

2 July – 5 July I-1 14 med. Chironomid adults
18 v. small Chironomid adults
>2000 Collembolans

I-2 3 ad. tipulids – [sdwed] (ca. 10 muscids, 21 chir.)
31 med. ad. Chironomids (all?)
1 v. small ad. Chironomid
<1000 Collembolans

"ad tipulids"

I-3 1 ad. Tipulid
25 ad. Dipterans – other than
<200 Collembolans

I-4: 9 ad. Muscids
17 ad Chironomids
1 ad Tipulid
1 small spider
<100 Collembolans

I-5 6 ad. Muscids
16 ad Chironomids } ?
<50 collembolans

Macleod
1966

Tanglefoot traps

[5 July] I-6

8 as Muscids
8 as Chironomids
1 as Tipulid
feathers of juv. longspur

7 July – 8 July

1 day harvest of II to synchronizer

II-1:

19 as Chironomid-type
7 as Muscid-type
2 flying 2-winged insect-sized pairs
1 as tipulid
<50 Collembolans

II-2

40 as. Chironomid-type
5 as. Muscid-type
1 2 pair wings-as above-sized
<50 Collembolans

II-3

55 as. Chironomids
2 2 pair wings – as above
2 tipulids – (winged)
<50 Collembolans

II-4

44 as Chironomids
1 as Muscid
1 as. tipulid
<50 Collembolans.

Maehr
1966

Tanglefeet

[8 July] II-5

105 ad. Chironomids - v. small
1 ad. Muscid
1 ♂ sm. ad. tipulid
2 ♀ ad. Tipula

II-6

141 v. small ad. Chironomids
2 ad Muscids
4 ad. tipulids
(3 Pedicia, 1 Prionocera ?)

8 July I-1

8 ad. tipulids
(1 predaceous-sawed)
54 ad. Chironomids, semi-aquatic
>2500 Collembolans.

I-2

26 ad. Tipulids (inc. 1 large Tipula)
167 ad Chironomids
5 ad Muscids
>1000 Collembolans
1 Spider

I-3

4 ad. tipulids (all smaller)
86 ad. Chironomids, s.l.
7 ad. Muscids
2 spiders
± 500 Collembolans.

Maclean

Tanglefeet

Pecos

8 July I-4

2 (Sm) ad. Crane flies
54 ad. Chironomids, s.l.
13 ad. Muscids
<100 Collembolans

Pecos

I-5

1 v. small Crane fly - ~~[illegible]~~ ops
51 ad. Chironomids, s.l.
10 ad. Muscids
<100 Collembolans

I-6

113 ad. Chironomids, s.l.
17 ad. Muscids
<50 Collembolans.

Pecos

1 July II-1

6 sm. Crane flies
257 ad. Chironomids, s.l.
20 ad Muscids
1 spider
<100 Collembolans
1 unknown - saved

II-2

1 4 winged beast, as before, saved.
4 ad. Tipulids
310 ad. Chironomids, s.l.
25 ad. Muscids

Maclean
1966

Tanglefeer

11 July

II-3:

22 ad. Tipulids
344 smaller ad Diptera
15 ad. Muscids
1 spider

II-4:

24 ad. Tipulid
343 smaller ad. Diptera
9 ad. Muscids
2 spiders

II-5:

>1000 v. small (collembolan sized) insects.
13 Tipulids
38 "small" Diptera
6 ad. Muscids.
>1000 Collembolans

II-6:

>1000 v. small insects
41 Tipulids - small
31 "small" Diptera
6 ad. Muscids

July - 11 July

I-1:

59 ad. Tipulids
191 small Diptera
5 Muscids

Macleod
1966

Tanglefeet

11 July

I-2:
96 ad. Tipulids
502 small ad. Diptera
7 ad. Muscids.

I-3:
70 ad. Tipulids
211 small Diptera
6 ad. Muscids

I-4:
12 ad. Tipulids.
240 sm. Diptera
12 muscids.

I-5:
4 ad. Tipulids
130 sm. Diptera
10 Muscids

I-6:
25 ad. Tipulids
167 sm. Diptera
21 Muscids.

14 July

I-1:
Under water. Location moved 5m..
7 ad. Tipulids - (♂ Pedicia)
46 sm. Dipterans.
(most of board bare.

Maclean
1966

Tanglefeet

[14 July]

I-2:

41 ♂ Pedicia
1 ♀ Pedicia
2 ♂ Tipula
11 ♂ Prionocera
1,106 smaller Diptera

I-3:

28 ♂ Pedicia
6 ♂ Prionocera
1 ♀ Prionocera
4 ♂ Tipula
376 smaller Diptera
21 Muscids

I-4:

6 ♂ Pedicia
5 ♂ Tipula
453 smaller Diptera
19 Muscids

I-5:

3 ♂ Pedicia
2 ♂ Tipula
1 ♂ Prionocera
385 smaller Diptera
16 Muscids.

I-6:

15 ♂ Pedicia
3 ♂ Tipula
2 ♂ Prionocera
400 sm. Diptera
16 Muscids

Macheda
1966

Tanglefoot.

14 July

II-1:

8 ♂ Pedicia
3 ♂ Tipula
505 sm. Diptera
13 Muscids
1 Spider

II-2:

2 ♂ Pedicia
4 ♂ Tipula
405 ad Diptera
13 Muscids

II-3

20 ♂ Pedicia
9 ♂ Tipula
366 sm. Diptera
13 muscids
1 Spider

II-4:

11 ♂ Pedicia
2 ♂ Tipula
1 ♀ Tipula
305 ad. sm. Diptera
7 muscids

II-5:

15 ♂ Pedicia
1 ♀ Pedicia
3 ♂ Prionocera
1 ♀ Prionocera
91 sm. ad. diptera

Maehr
1966

Tanglefeet

[14 July] (II-5) 16 Muscids

II-6:
31 ♂ Pedicia
6 ♂ Prionocera
4 ♀ Prionocera
66 sm. ad. Diptera
18 muscids
2 ad. Trichoptera

17 July I-1:
11 ♂ Pedicia
5 ♂ Tipula
3 ♂ Prionocera
1,189 smaller Diptera - mostly v. small
35 ad. Muscids.

I-2:
18 ♂ Pedicia
6 ♂ Tipula
2 ♂ Prionocera
886 smaller Diptera - mostly v. small
46 Muscids.

I-3:
16 ♂ Pedicia
5 ♂ Prionocera
1 ♀ Prionocera
3 ♂ Tipula
1 ♀ Tipula
392 smaller ad. Diptera
25 Muscids

Maclean
1966

Tanglefeet

[17 July] [I-3] 2 Spiders.

I-4:
9 ♂ Tipula
2 ♂ Prionocera
1 trichoptera
415 smaller diptera
17 Muscids

I-5:
6 ♂ Pedicia
2 ♂ Tipula
1 ♂ Prionocera
592 smaller diptera
32 Muscids

I-6:
7 ♂ Pedicia
5 ♂ Tipula
2 ♂ Prionocera
481 smaller ao diptera
14 Muscids.

II-1:
no Tipulids
384 sm. ao. Diptera
7 Muscids

II-2:
2 tipulid escapes - look like Tipula (legs)
295 sm. ao. diptera
16 Muscids

Maclean
1966

Tanglefeet

[17 July] II-3:

7 ♂ Pedicia
2 ♂ Tipula
1 moth
4 Trichoptera
214 sm. ad. Diptera
12 Muscids

II-4:

4 ♂ Pedicia
163 sm. ad. Diptera
4 Trichoptera
3 Muscids.

II-5:

4 ♂ Pedicia
38 smaller Diptera
14 Muscids

II-6:

4 ♂ Prionocera
2 ♀ Prionocera
1 Trichoptera
54 smaller ad. Diptera
23 Muscids
1 Spider

Maclean
1966

Tanglefeet

20 July

I-1:

1 ♂ *Pedicia*
82 sm. ad. Diptera
11 Muscids
1 Spider

I-2:

1 ♂ *Tipula*
1 ♂ *Prionocera*
1 Trichoptera
81 sm. ad. Diptera
14 Muscids
1 Spider

I-3:

1 ♂ *Tipula*
40 sm. ad. Diptera
7 Muscids
2 Spiders

I-4:

1 ♂ *Tipula*
57 ad. sm. Diptera
12 Muscids

I-5:

3 ♂ *Pedicia*
1 *Tipula* wing - ♂
76 sm. ad. Diptera
3 Muscids

Maclean
1966

Tanglefeet

[20 July]

I-6:

1 ♂ Tipula
1 ♂ Pedicia
81 sm. ad. Diptera
10 Muscids
1 sm. spider

II-1:

49 sm. ad. Diptera
3 muscids.

II-2:

43 sm. ad. Diptera
5 muscids
1 Tenthredinid

II-3:

2 ♂ Tipula
48 sm. ad. Diptera

II-4:

28 sm. ad. Diptera

II-5:

4 trichoptera
17 sm. ad. Diptera
6 Muscids

II-6:

1 ♀ Prionocera
5 trichoptera
12 sm. ad. Diptera
5 Muscids

Maclean
1966

Tanglefoots

23 July I-1:

70 sm. ao. Diptera
13 Muscids
1 Spider

I-2:

3 ♂ *Tipula*
1 ♀ Tipula
1 sm. winged ♀ tipulid ? sawed in part
81 sm. ao. Diptera
28 Muscids

I-3:

1 ♂ *Tipula*
43 sm. ao. Diptera
20 muscids

I-4:

2 ♂ *Tipula*
65 sm. ao. Diptera
15 muscids

I-5:

1 moth
118 sm. ao. Diptera
23 muscids

I-6:

1 ♂ *Tipula*
2 ♂ *Pedicia*
132 sm. ao. Diptera
9 muscids.

Maclean
1966

tanglefoot

23 July

II-1:

115 sm. ad. Diptera
19 muscids.

II-2:

1 ♂ Pedicia
1 ♀ Tipula
1 Trichoptera
85 sm. ad. Diptera
15 Muscids

II-3:

67 sm. ad. Diptera
9 muscids
1 trichoptera
1 spider

II-4:

42 sm. ad. ~~muscids~~ Diptera
13 muscids

II-5:

22 muscids
4 sm. ad. Diptera
2000 collembolans

II-6:

13 muscids
6 sm ad Diptera
1 - as I-2 - stored w/ I-2.

MacLean
1966

Tanglefoot

26 July

I-1: 45 sm. ad. Diptera
12 muscids
4 spiders (small)

I-2: 22 sm. ad. Diptera
18 muscids

I-3: 32 sm. ad. Diptera
8 muscids

I-4: 24 sm. ad. Diptera
23 muscids

I-5: 44 sm. ad. Diptera
9 muscids.

I-6: 48 (u.) sm. ad. Diptera

II-1: Tipula (?) legs - 1 seg
Pedicia (??) legs - 2 segs
57 (u.) sm. ad. Diptera

II-2: 18 sm. ad Diptera
3 muscids
1 spider

Maclean
1966

Tanglefeet

[26 July] II-3: 37 sm. ao. Diptera
5 muscids

II-4: 1 large winged tipulid (abdomen gone)
22 sm. ao. Diptera
9 muscids
1 spider

II-5: 5 muscids
4 sm. ao. Diptera
>3000 collembolans

II-6: 10 muscids
5 sm. ao. Diptera
>2500 collembolans.

30 July [4 days] I-1: 19 muscids
27 sm. ao. Diptera
2 Ichneumonids
2 Spiders

I-2: 4 Tipula
30 Muscids
14 Sm. ao. Diptera
3 spiders
6 Ichneumonids

Maclean
1966

Tanglefeet

[30 July] I-3:

24 Muscids
13 sm. ad. Diptera
8 Ichneumonids (6 of 1 sp.; 2 of another)
1 Staphylinid beetle
1 Spider
1 ♀ Tipula

I-4:

1 ♂ Tipula
25 Muscids
18 sm. ad. Diptera
1 Ichneumonid
1 Spider

I-5:

23 sm. ad. Diptera
16 muscids
2 spiders

I-6:

35 sm. ad. Diptera
11 Muscids
5 Ichneumonids
1 spider

II-1:

33 sm. ad. Diptera
21 Ichneumonids
4 muscids

Machean
1966

Tanglefeet

[30 July

II-2:

11	Sm. ao. Diptera
5	muscids
9	(sm.) Ichneumonids
1	spider

II-3:

21	Sm. ao. Diptera
10	muscids
4	Ichneumonids
1	spider

II-4:

16	Sm. ao. Diptera
4	muscids
2	Ichneumonids

II-5:

14	Muscids ~~Sm. ao. Diptera~~
5	Sm. ao. Diptera
10	Ichneumonids
> 2000	Collembolans

II-6:

2	Trichoptera
18	Muscids
13	Ichneumonids
7	Sm. ao. Diptera
2	spiders
>2000	Collembolans

Maclean
1966

~~Stomachs~~ tanglefeet

2 August I-1:

36	Sm. ao. Diptera
25	Ichneumonids
5	Muscids
4	Spiders
800 ±	Collembolans

I-2:

27	Sm. ao. Diptera
8	Ichneumonids
10	Muscids
400 ±	Collembolans

I-3:

14	Sm. ao. Diptera
11	Muscids
2	Ichneumonids
150 ±	Collembolans

I-4:

11	Sm. ao. Diptera
7	Muscids
6	Ichneumonids
500	Collembolans

I-5:

21	Sm. ao. Diptera
13	Muscids
10	Ichneumonids

I-6:

15	Muscids
12	Sm. ao. Diptera
6	Ichneumonids

Macleod
1966

tanglefoots

[2 August] II-1:

15	Sm. ad. Diptera
6	muscids
17	Ichneumonids

II-2:

17	Sm. ad. Diptera
9	Muscids
11	Ichneumonids

II-3:

11	Sm. ad. Diptera
11	Muscids
6	Ichneumonids

II-4:

8	Sm. ad. Diptera
6	Muscids
11	Ichneumonids
1	Spider
250±	Collembolans

II-5:

1 ♂	Prionocera
10	Muscids
6	Ichneumonids
1	Sm. ad. Diptera
> 3000	Collembolans

II-6:

5	Sm. ad. Diptera
5	Muscids
8	Ichneumonids
> 3000	Collembolans

Macleod
1966

Tanglefoots

6 August [4 days]

I-1:

11	Sm. ad. Diptera
13	Ichneumonids
1	Muscid
1	Spider
ca. 250	Collembolans

I-2:

6	Sm. ad. Diptera
15	Ichneumonids
4	Muscids
1	spider
ca. 200	Collembolans

I-3:

3	Sm. ad. Diptera
10	Ichneumonids
2	Muscids
ca. 50	Collembolans

I-4:

3	Sm. ad. Diptera
6	Ichneumonids
1	Muscid

I-5:

6	Sm. ad. Diptera
21	Ichneumonids
10	Muscids.

I-6:

3	Sm. ad. Diptera
12	Ichneumonids
6	Muscids

Maclean
1966

Tanglefoots

6 August II-1:

3	Sm. ao. Diptera
15	(Small) Ichneumonids
1	Spider

II-2:

2	Sm. ao. Diptera
11	Sm. Ichneumonids

II-3:

4	Sm. ao. Diptera
4	Sm. Ichneumonids
5	Muscids
1	Spider

II-4:

3	Sm. ao. Diptera
4	Ichneumonids
1	Muscid

II-5:

7	Sm. ao. Diptera
5	Sm. Ichneumonids
2	Muscids

II-6:

12	Sm. ao. Diptera
2	Muscids.

Maclean
1966

Tanglefeet

9 August

I-1:

2	Sm. ad. Diptera
5	Ichneumonids
1	Muscid
ca. 200	Collembolans

I-2:

2	Sm. ad. Diptera
1	Ichneumonid
1	Muscid
ca. 200	Collembolans

I-3:

5	Sm. ad. Diptera
9	Ichneumonids
2	Muscids
1	Spider
1	Chironomid larva
< 100	Collembolans

I-4:

1	Muscid
1	Ichneumonid

I-5:

1	Sm. ad. Dipteran
7	Ichneumonids
2	Muscids.

I-6:

1	Muscid
4	Ichneumonids

Maclean
1966

Tanglefeet

9 August II-1:

9	Small Ichneumonids
1	Muscid.

II-2:

1	Sm. ad. Dipteran
1	Sm. Ichneumonid
1	Sm. Spider

II-3:

2	Sm. ad. Dipterans
7	Ichneumonids
1	Muscid

II-4:

1	Sm. ad. Dipteran
5	Ichneumonids
1	Muscid
1	Spider

II-5:

2	Sm. ad. Dipterans
3	Ichneumonids
1	Muscid
1	Spider

II-6:

2	Sm. ad. Diptera
4	Ichneumonids

Maclean
1966

Tanglefeet

15 August
(6 Days)

I-1:	14	sm. ad. Diptera
	15	Ichneumonids
	1	Muscid
	4	Sm. spiders
I-2:	11	Sm. ad. Diptera
	9	Ichneumonids
	7	Muscids
	ad. 250	Collembolans
I-3:	1	Sm. ad. Diptera
	6	Ichneumonids
	2	Musids
I-4:	5	Sm. ad. Diptera
	3	Ichneumonids
	1	Muscid
	1	Spider
I-5:	1	large tipula larva!
	1	Sm. ad. Dipteran
	20	Sm. Ichneumonids
	11	Muscids
	1	sm. spider

MacLean
1966

Tangle Seer

[15 August] I-6:

1	Staphylinid adult
8	Sm. ad. Diptera
8	Ichneumonids
7	Muscids
1	Spider

III-1:

11	Sm. ad. Diptera
11	Ichneumonids (small)
1	Muscid

II-2:

1	<u>Tipula</u> pupa (empty - just case?)
3	Sm. ad. Diptera
4	Ichneumonids
1	Muscid
1	Sm. spider

II-3:

3	Sm. ad. Diptera
11	Ichneumonids
1	Muscid
3	Sm. spiders

II-4:

1	ad. ♂ <u>Tipula</u>
12	Sm. ad. Diptera
7	Ichneumonids
3	Muscids
3	Spiders

Macheda
1966

Tanglefeet

[15 August] II-5:

4	sm. ad. Diptera
17	sm. Ichneumonids
3	Muscids
1	Spider

II-6:

9	v. sm. ad. Diptera
28	Ichneumonids
2	Muscids
2	Spiders

1 September

I-1:

4	Ichneumonids
1	Sm. ad. Dipteran
1	Muscid
2	Spiders
1	~~Lepidoptera~~ Tenthredinid larva - sawfly.

I-2:

1	Ichneumonid
> 2000	Collembolans

I-3:

9	Ichneumonids
3	Sm. ad. Diptera
2	Spiders

I-4:

4	Ichneumonids
2	Muscids
2	Sm. ad. Diptera

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[1 Sept]

I-5:
15 Ichneumonids
3 v. sm. ad. Diptera

I-6:
15 Ichneumonids
7 Sm. ad. Diptera
1 unknown larva - sawed

II-1:
14 Ichneumonids (sm.)
3 Sm. ad. Diptera
1 Spider
1 ad. Staphylinid.

II-2:
7 Ichneumonids
1 Sm. ad. Dipteran
2 Spiders
1 ad. Staphylinid

II-3:
5 Ichneumonids
3 Sm. ad. Diptera

II-4:
4 Ichneumonids
1 Sm. ad. Dipteran
1 Spider

II-5:
2 Ichneumonids
2 v. small ad. Diptera
> 5000 Collembolans.

Maeka
1966

Tanglefeet

[1 Sept] II-6: 1 ad. Hemipteran - sdwed
8 Ichneumonids
ca 5,000 Collembolans.

G.L. 86688